S. 4698. 5

THE LANCET.

No. 4210. Vol. CLXVI. LONDON, SATURDAY, MAY 7, 1904. [Pp. 120+56.

CONTENTS.

GOULSTONIAN LECTURES on Some Disorders of the Blood and Blood-forming Organs in Early Life. Delivered before the Royal College of Physicians of London on March 8th, 10th, and 15th, 1904, by ROBERT HUTCHISON, M.D. Edin., F.R.C.P. Lond., Assistant Physician to the London Hospital, &c.—Lecture I.—(*Illustrated*) 1253

THE OLIVER-SHARPEY LECTURES on Recent Studies on the Tissue-lymph Circulation. Delivered before the Royal College of Physicians of London on April 12th and 14th, 1904, by GEORGE OLIVER, M.D., F.R.C.P. Lond. — Lecture II. — (*Illustrated*) 1262

ORIGINAL ARTICLES.

Abnormal Muscular Contractions. By E. NOBLE SMITH, F.R.C.S. Edin., Senior Surgeon to the City Orthopædic Hospital, London. — (*Illustrated*) 1269

Mesenteric Cysts. By E. P. BAUMANN, M.D. Edin., M.R.C.P. Lond., Medical Registrar and Pathologist to the Hospital for Sick Children, Great Ormond-street.—(*Illustrated*) 1272

Amaas, or Kaffir Milk-pox. By W. E. DE KORTÉ, M.B. Lond. (*Illustrated*) 1273

A Case for Diagnosis. By W. JOHNSON SMYTH, M.D. Edin., late Senior Medical Officer, Kent County Asylum, Maidstone 1276

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A Case of Septic Pneumonia; Abscess of the Lung; Aspiration; Recovery. By ARTHUR J. SHARP, M.D. Lond., F.R.C.S. Eng., and HUGH N. KEELING, L.R.C.P. Lond., M.R.C.S. Eng. 1276

Note of a Case of Shoulder Presentation ending by Natural Delivery. By the Right Rev. J. E. HINE, D.D. Oxon., M.D. Lond., Bishop of Zanzibar 1278

A Case of Carbolic Poisoning in an Infant. By LOUIS E. STEVENSON, B.A., M.B., B.C. Cantab. 1279

A MIRROR OF HOSPITAL PRACTICE.

ST. GEORGE'S HOSPITAL:

Three Cases of Prostatectomy. (Under the care of Mr. H. W. Allingham) 1279

MEDICAL SOCIETIES.

PATHOLOGICAL SOCIETY: Sarcoma of the Pancreas associated with Pseudo-lipæmia. —Experiments on Ankylostoma Larvæ 1280

LIVERPOOL MEDICAL INSTITUTION: Strangulated Inguinal Hernia. — Partial Enterocele, Strangulated. — The Treatment when certain Foreign Bodies have been Swallowed. —Digestants. — Interpretation of Physical Signs in Pleural Empyema 1280

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY: "Habitual" and Incomplete Abortion 1281

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY: Recurring Eclampsia.—Hydrocephalus with Post-partum Hæmorrhage.—Primary Carcinoma of the Ovary 1282

BRADFORD MEDICO-CHIRURGICAL SOCIETY: Medical Customs of the Tibetans 1282

REVIEWS AND NOTICES OF BOOKS.

Nothnagel's Encyclopædia of Practical Medicine: Diseases of the Liver, Pancreas, and Suprarenal Capsules. By Leopold Oser, M.D., Edmund Neusser, M.D., Heinrich Quincke, M.D., and G. Hoppe-Seyler, M.D. Authorised translation from the German. Edited, with additions, by Reginald H. Fitz, M.D., and Frederick A. Packard, M.D... 1283

Annual Report of the Public Health of Gibraltar for the Year 1903. By W. H. Horrocks, M.B., B.Sc. Lond., D.P.H. R.C.P.S. Eng., Major, R.A.M.C., M.O.H. 1283

A Manual of Pathology. By Joseph Coats, M.D. Glasg. Fifth Edition, revised by L. R. Sutherland, M.B. Glasg. 1284

The Prevention of Consumption. By Alfred P. Hillier, M.D. Edin. 1284

The Bombay Medical and Physical Society. Vol. VII., No. 1 1285

Short Talks with Young Mothers. By Charles Gilmore Kerley, M.D. 1286

The Meal Poke, University of St. Andrews, University College, Dundee. Edited by B. Bellyse Baildon, M.A., Ph.D., and R. Cochrane Buist, M.A. St. And., M.D. Edin. 1286

Mechanical Vibratory Stimulation, its Theory and Application in the Treatment of Disease. By Maurice F. Pilgrim, M.D. 1286

Burdett's Hospitals and Charities, 1904. By Sir Henry Burdett, K.C.B. 1286

The Old Riddle and the Newest Answer. By John Gerard, S.J., F.L.S. 1286

NEW INVENTIONS.

Self-retaining Abdominal Retractors for Use in the Hypogastrium and Epigastrium. (*Illustrated*) 1287

An Instrument for Preparing and Carrying Cover-glass Films.—(*Illustrated*) 1288

LEADING ARTICLES.

"PASSING OFF" 1289

THE VALUE OF THE AURICLE OF THE EAR 1290

SANATORIUMS FOR WORKING MEN 1291

UNDESIRABLE MARRIAGES 1292

ANNOTATIONS.

The Old Hardships of London Medical Students 1293

The London School Board 1293

Malaria and Preventive Measures 1294

The House of Commons and Ventilation 1294

Attempted Suicide by means of Illuminating Gas 1294

The Tax upon a Cup of Tea and a Glass of Beer 1295

Stereognosis as a Localising Factor in Cerebral Affections 1295

The Sanitary Institute Dinner 1295

Investigations into the Causation of Small-pox 1296

The Sporozoa in relation to Disease in Man and Animals 1296

Changes in the Suprarenal Capsules in Cases of Nephritis 1297

The Hypodermic Injection of Calomel: Tribute to its Discoverer 1297

Meningitis in Mumps 1297

The Revaccination Bill of 1904.. 1298

Festival Dinner of the Middlesex Hospital 1298

The General Medical Council... 1299

LOOKING BACK.

(From THE LANCET, Saturday, May 6, 1826) 1303

VITAL STATISTICS:

Health of English Towns 1303

Health of Scotch Towns 1303

Health of Dublin 1304

SPECIAL ARTICLES.

Royal College of Physicians of London 1288

The Bacteriology of the Thames, of the Sea, and of Shell-fish.—(First Notice) ... 1299

Medicine and the Law 1300

Metropolitan Street Ambulance Association 1301

The Services 1304

The Organisation of the Profession 1307

The German Surgical Congress. (*Continued*) 1308

Notes from India 1309

Birmingham 1310

Manchester 1311

Wales and Western Counties Notes 1312

Scotland 1312

Ireland 1312

Paris 1313

New York 1314

CORRESPONDENCE.

The Cholera and Enteric Fever Epidemics at Hamburg (Dr. Reincke) 1305

The East London Medical Society (Dr. George Black, Dr. Edwin Hastings, Mr. F. Harris White) 1305

On Continuous Clinical Temperature Charts (Dr. C. Reissmann) 1305

British Home and Hospital for Incurables (Mr. Edgar Penman) 1306

Welsh Medical Dinner (Mr. T. P. Beddoes, Mr. Wm. Lloyd) 1306

Testing the Eyesight of the Nation (Mr. W. Salt)..... 1306

The Tenure of Office of the Medical Officer of Health ... 1306

Enterprise 1319

Design or Accident? 1319

Dr. J. T. C. Conry's Defence Fund (Dr. Edwin T. Ensor, Mr. Walter L. Roberts) 1320

An Income-tax Question..... 1320

OBITUARY.

Austin Meldon, F.R.C.S., M.R.C.P. Irel. 1315

William Fothergill Tuckett, M.R.C.S. Eng., L.R.C.P. Ed., L.S.A., J.P. 1315

MEDICAL NEWS.

Literary Intelligence..... 1308

Pass-lists of the Examining Board in England by the Royal Colleges of Physicians and Surgeons, University of Cambridge, Institute of Chemistry of Great Britain and Ireland, and Conjoint Examinations in Ireland by the Royal College of Physicians and the Royal College of Surgeons 1315

Donations and Bequests 1316

University of Oxford 1316

Royal College of Surgeons in Ireland 1316

Royal College of Surgeons of England 1316

Royal National Pension Fund for Nurses 1316

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics..... 1316

House of Commons 1317

Books, &c., received 1318

Appointments..... 1318

Vacancies 1319

Births, Marriages, and Deaths 1319

Notes, Short Comments, and Answers to Correspondents .. 1319

Medical Diary 1320

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX.

MEDICAL AND OTHER BOOKS AND PUBLICATIONS.

COVER.

PAGE

ARNOLD:—
Beddard, &c. Practical Physiology .. 1

BAILLIERE, TINDALL & COX:—
Hall ..... Diseases of the Nose, &c.
Isaac ..... Atlas of Histology 1
Campbell, H. Respiratory Exercise in Treatment of Disease..
Hernia ..... Hernia 1
" ..... Descended Testis 1
Fraser ..... Stricture of the Urethra 1
Gavell ..... Dental Surgery 1

CHURCHILL, J. & A.:—
Galabin .... Midwifery 1
Marshall .... Stretcher Drill 1
Squire's Pocket Companion to the British Pharmacopœia 1
Wallace .... Decay in Teeth 1

GLAISHER:—
Cullingworth Charles White, F.R.S. 1
Herschell .. Manual of Intragastric Technique 1
Kingscote .. Asthma 1

GRIFFIN & CO.:—
Griffin's Standard Publications 1

LEWIS:—
Campbell, H. Flushing, &c. 1
" Headache 1
Roth ..... Curvature of the Spine 1

PENTLAND, Y. J.:—
Bruce ..... Principles of Treatment 1
Cunningham. Text-book of Anatomy 1
" Manual of Anatomy.... 1
Gibson & Russell.... Physical Diagnosis 1
Hair & Ritchie.... Manual of Bacteriology 1
Thomson & Miles..... Manual of Surgery 9

SAUNDERS & CO.:—
Nothnagel's Practice 1

WILLIAMS & NORGATE:—
Bastian ..... Studies in Heterogenesis 1

MEDICAL LIBRARIES, &c.:—
Clinical Journal 1
Davidson—Sight-Testing for the G.P. 1

APPLETON, S.:—
Morrow .... Social Diseases, &c. 13

BAILLIERE, TINDALL & COX:—
Allingham .. Diseases of the Rectum 16
" .. Colotomy, &c. 16
" .. Operative Surgery 16
Higg ..... Constipation 16
Browne & Stevenson.. Squint Occurring in Children 16
Campbell, E. Refraction of the Eye.. 16
Latham .... Sanatorium Treatment of Tuberculosis..... 16
" .... Pulmonary Consumption 16
Monro ..... Manual of Medicine.... 32
Students' Aids Series..... 32
Thorne ..... Nauheim Treatment.... 16
Younger .... Insanity 17

BALE SONS & DANIELSSON:—
Bantock .... Germ Th ory of Disease
Moullin .... Inflammation of the Appendix 17
" .... Ulcer of the Stomach .. 16

CASSELL & CO.:—
Bland-Sutton Tumours 14
Bruce ..... Materia Medica &c. 14
Clarke ..... Orthopædic Surgery.... 14
Gould ..... Surgical Diagnosis 14
Hernaf ..... Diseases of Women 14
" .... First Lines to Midwifery 14
" .... Difficult Labour..... 14
Hutchinson.. Syphilis 14
Hutchison & Rainy .. Clinical Methods 14
Rolls & Eddins .. Elements of Histology. 14
Manson, Sir P. Tropical Diseases 14
Morris, H. .. Surgical Diseases of the Kidney and Ureter 14
Morris, M. .. Diseases of the Skin 14
Savage ..... Insanity &c. 14
Treves, Sir F. Operative Surgery 14
" Intestinal Obstruction.. 14
" Surgical Anatomy..... 14
" Surgical Operations 14
Yeo ..... Medical Treatment 14
" ..... Food in Health, &c. 14
" ..... Mineral Springs, &c. .. 14

CHURCHILL, J. & A.:—
Beach ..... Treatment of Mentally Feeble Children 9
Bigg ..... Spinal Caries 15
" ..... Spinal Curvature 15
" ..... Deformities of the Head and Neck 15
" ..... Amputations 15
" ..... Manual of Orthopraxy 15
Cripps ..... Ovariotomy, &c. 10
Fenwick, E. H. .... Operative, &c., Tumours 9
" .... Urinary Diseases 9
" .... Electric Cystoscopy 9
" .... Diseases of the Kidney 9
" .... Ulceration of the Bladder 9
" .... Tumours of the Bladder 9
Gowers, Sir W. R. .... Epilepsy, &c. 9
Harrison..... Stone Prostate, &c. 16
Harutrige .. Refraction of the Eye .. 9
" .. The Ophthalmoscope .. 9
Jessop ..... Ophthalmic Surgery .. 17
Leftwich .... Hydraulic Pressure in the Large Intestine .. 9
Liebreich .. Effects of Borax 9
Parsons .... Ophthalmic Optics, &c. 9
Pereira's Selecta Præscripta 9
Smith, E..... Wasting Diseases of Infants 9
" .... Disease in Children .. 9
Squire's Pocket Companion to the British Pharmacopœia 12
St. Thomas's Hospital Reports .. 9
White ..... Materia Medica 9

GLAISHER:—
Blake ..... Colitis, &c. 12
Cullingworth Charles White, F.R.S.. 12
De Frenceville ..... Ethyl Chloride 12
Herschell .... Intragastric Technique 12
Wallace, C. S. Preparations for Operations 12
West ..... Granular Kidney, &c. .. 14

GREEN & SONS (Edin.):—
Ballantyne.. Essentials of Obstetrics 12

GRIFFIN & CO.:—
Aitchison.... Medical Handbook 5
Anderson.... Diseases of the Skin.... 5

PAGE

GRIFFIN—(Continued):
Atlas of Urinary Sediments 8
Blyth..... Poisons 5
" ..... Foods 5
Bury ..... Clinical Medicine 5
Caird & Cathcart .. Surgical Handbook 5
Clark, Sir A., Hadley, & Chaplin .. Diseases of the Lung .. 5
Crimp ..... Sewage Disposal 5
Davies ..... Hygiene 5
Donkin..... Diseases of Childhood .. 5
Duckworth, Sir D. .... Gout 5
Elder & Fowler .... Diseases of Children.... 5
Garrod ..... Rheumatism &c. 5
Hunter ..... Pernicious Anæmia 5
Lewis ..... Mental Diseases 5
Macleod ..... Hygiene, &c. 14
Mann ..... Urine 5
" ..... Forensic Medicine &c... 5
Mercier ..... Asylum Management .. 5
Meyer & Fergus .... Diseases of the Eye .. 5
Middleton .. Water Supply 5
Mitchell .... Flesh Foods 5
Naylor ..... Trades' Waste 5
Obersteiner .. Central Nervous Organs 5
Pawlow .... Digestive Glands 8
Phillips .... Diseases of Women 8
Porter & Godwin .. Surgeon's Pocket-book 5
Reid ..... Practical Sanitation 5
Richmond .. Dairy Chemistry 5
Tholnot & Masselin .. Bacteriology 5
Von Jaksch.. Clinical Diagnosis 8
West ..... Organs of Respiration.. 5
Willoughby.. Milk 5
Wood ..... Sanitary Engineering .. 5

KEGAN PAUL & CO.:—
Taylor ..... Diseases of the Eye 10

KIMPTON, H.:—
Dudley ..... Gynecology 12
Grayson's Laryngology 13
Koplik ..... Diseases of Infancy and Childhood 12
Text-book of Anatomy..... 13

LEWIS:—
Carter ..... Practical Medicine 7
Higgens..... Ophthalmic Practice 7
Kenwood.... Public Health Laboratory Work 7
Lewers..... Diseases of Women 7
" ..... Cancer of the Uterus .. 7
Martindale & Westcott .. Extra Pharmacopœia .. 14
Moullin .... Enlargement of the Prostate 16
" .... Inflammation of the Bladder..... 16
New Sydenham Society:—
Atlas of Clinical Medicine, &c..... 6
Parsons & Kenwood.. Hygiene, &c. 7
Radcliffe-Crocker .. Diseases of the Skin .. 7
Swanzy .... Diseases of the Eye, &c 7
Walker..... General Pathology of Inflammation 7

LONGMANS, GREEN & CO.:—
Ashby & Wright.... Diseases of Children.... 10
Dakin ..... Handbook of Midwifery 10
Dickinson .. Renal and Urinary Affections 10
Gray ..... Anatomy 10
Phillips .... Materia Medica 10

PAGE

LONGMANS—(Continued):
Quain ..... Dictionary of Medicine 10
Schäfer..... Essentials of Histology 10
Smale & Colyer .... Diseases of the Teeth . 10

MACMILLAN & CO.:—
Brunton, Sir T. L. .... Disorders of Assimilation, Digestion, &c. .. 8
" .... Text-book of Pharmacology, &c..... 8
" .... Disorders of Digestion 8
" .... Pharmacology &c..... 8
" .... Materia Medica 8
" .... Modern Therapeutics 8
" .... Lectures on the Action of Medicines 8
Cancer Research Laboratory Reports 14
Hewitt ..... Anæsthetics 8
Hood..... Treatment of Injuries 8
Lockwood .. The Surgery of Appendicitis 14
Manual of Medicine 8
New System of Medicine..... 8
Stonham .... Manual of Surgery 8

PENTLAND, Y. J.:—
Lockwood .. Aseptic Surgery..... 14
" .. Care of Hernia, &c. 14

REEMAN:—
Archives of the Roentgen Ray, &c. .. 15
Casper & Richter .. Kidney Diseases 15
Culbreth .... Materia Medica 14
Edgar ..... Practice of Obstetrics .. 15
Roseman .... Guide to Disinfection .. 15
Wharton .... Minor Surgery 13

RENSHAW:—
Wood ..... Application of Trusses 17

SAUNDERS & CO.:—
Medical Hand-Atlases 14
Nothnagel's Practice 11

SMITH, ELDER & CO.:—
Barnes..... Obstetric Medicine &c. 3
" ..... Manual of Midwifery for Midwives..... 3
Cheyne..... Antiseptic Surgery 3
Clinical Manual for the Study of Medical Cases 3
Eliis ..... Anæsthetics 3
Gee..... Auscultation &c..... 3
Heath ..... Dictionary of Practical Surgery 3
Juler..... Ophthalmic Science.... 3
Keetley ..... Orthopædic Surgery.... 17
" .... Gastric Ulcers..... 17
" .... Complicated Fractures 17
Lawson .... Diseases and Injuries of the Eye 2, 12
Marshall .... Vertebrate Embryology 3
Marshall & Hurst .... Practical Zoology 3
Playfair .... Practice of Midwifery .. 3
Schäfer..... Practical Histology 3
Simon, Sir J. English Sanitary Institutions 3
Wood ..... Therapeutics 3

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering 17
Cox—Catalogue of X-Ray, High Frequencer, &c., Apparatus 17
Dolwood Spa, Llanwrytd—
Grant: Handbook to the Sulphur Bath..... 17
Smith & Son—May Catalogue 17
Spilsbury—
Encyclopædia Medica 19

OFFICIAL AND GENERAL ANNOUNCEMENTS.

APPOINTMENTS VACANT:—
Belgrave Hospital for Children 92
Bethnal Green Infirmary 94
Birmingham and Midland Hospital for Skin, &c., Diseases 95
Chelsea Hospital for Women 93
Dumfries and Galloway Royal Infirmary 92
Evelina Hospital for Sick Children, Southwark 93
General Infirmary, Leeds 93
Glasgow Parish Council 94
Hastings, St. Leonards and East Sussex Hospital 93
Lewisham Hospital for the Insane, near 94
Leicester Infirmary 93
Lond n Hospital 93
Mildmay Mission Hospital 94
Mount Vernon Hospital for Consumption 93
Norfolk and Norwich Hospital 92
North-Eastern Hospital for Children 92
North-West London Hospital 93
Oldham Infirmary 92
Par h District Asylum 93
Royal Free Hospital, Gray's Inn-road 93
Royal Lond n Ophthalmic Hospital.. 93
Samaritan Free Hospital 93
Society of Apothecaries of London .. 92
South Devon and East Cornwall Hos. 94
Tottenham Hospital 93
University of Manitoba 93

APPOINTMENTS—(Continued).
Valkenberg Asylum, Cape Town..... 93
Victoria Hos. for Children, Chelsea .. 93
Westmin ter General Dispensary .. 94
West Suffolk General Hospital, Bury St. Edmunds 93
York County Hospital 94

ASSISTANCIES, MEDICAL 89

ASYLUMS, HOMES, &c.:—
Abergelwith, the Harrits of Wales .. 93
Aisdore Sanatorium, co. Wicklow .. 93
Ashwood House, Nigh-Oxford 93
Barnwood House Hospital 94
Bishopstone House, Bedford 95
Bodorgan Manor, Bournemouth 95
Buntingford House Retreat, Herts .. 87
Camberwell House, Peckham-road.. 88
Cheadle Royal, Cheadle 91
Clarence Lodge, Clapham-park 91
Coppice, The, Nottingham 94
Cornwall Winter Health Resort..... 96
Cotteswold Hostel for Consumptives, Birdlip 93
Cotswold Sanatorium 90
Crookesbury Sanatorium, Surrey .. 94
Dalrymple House, Rickmansworth .. 85
Dartmoor Sanatorium 90
Dorchester Asylum 90
Duchess Nursing Home 92
Dunstone Park Sanatorium, Paignton 91
East Anglian Sanatorium Co., suffolk 90

ASYLUMS—(Continued).
Engadine..... 85
Fairford Retreat, Gloucestershire .. 93
Ferguson, Harriet 91
Finsen Light Cure &c., Norwich 92
Flower House, Catford..... 84
Grove House, Church Stretton..... 84
Grove, The, Catton, Norwich 90
Hadley Open Air Sanatorium, Ipsden.. 90
Haydock Lodge, Newton-le-Willows.. 87
High Shot House, Twickenham 93
Hitch, Mrs., Hollington 84
H., Westminster 92
Inverurith Lodge Retreat, Dumfries .. 87
Lady superintendent, Brighton 91
Lady superintendent, Streatham 91
Lawson, Nordrach-on-Dee, Banchory 92
London Open - Air Sanatorium, Wokingham 93
Mable House, near Dumfries 91
Melbourne House, Leicester 84
Middleton Hall, Co. Durham 92
Midland Open-Air Sanatorium..... 88
Moat House, Farnworth 84
Nordrach in Wales..... 93
Nordrach-upon-Mendip Sanatorium .. 93
Northlands Retreat, Wandsworth 93
Northwoods House, Winterbourne.... 88
No. 544, L.O., Strand..... 92
No. 648, L.O., Strand..... 91
No. 647, L.O., Strand..... 91
No. 745, L.O., Strand..... 91
No. 754, L.O., Strand..... 91

ASYLUMS—(Continued).
No. 759, L.O., Strand..... 91
Ochil Hills Sanatorium 93
Overdale, Whitefield 91
Peckham House, Peckham..... 87
Plas-yn-Dinas, Wales 99
Plympton House, South Devon 84
Reservoir Open-air Sanatorium 88
Shaftesbury House, Formby..... 87
Sister, Shackeath 84
Springfield House Private Asylum, Bedford 89
St. Andrew's Hospital, Northampton 84
Stewart, Dr., Danmarry 84
St. Luke's Hospital, E.C. 84
Stocker, Craven-street 91
Stone House, Canterbury 91
Stretton House, Church Stretton 84
Sunshine, Chislehurst 91
The Silver Birches, Kwoom..... 85
Thunderciffe Grange, nr. Rotherham 91
Tower House, Leicester 84
Turner, Adolphi 91
Vale of Clwyd Sanatorium..... 88
Warneford Asylum, Oxford 84
West Malling-place, Kent 84
Wimbaden 90
Winchester House, Kingston-hill 83
Wonford House, Exeter 84
Wye House, Buxton..... 84
Wyke House, Isleworth 84
Yarrow Convalescent Home, Broadstairs..... 89

(For continuation of Index to Official and General Announcements, and Trade and Miscellaneous Advertisements, see page 4.)

SMITH, ELDER & CO.'S PUBLICATIONS.

NEW EDITION OF JULER'S OPHTHALMIC SCIENCE AND PRACTICE.

With 8 Additional Plates and 29 New Illustrations in the Text. THIRD and ENLARGED EDITION. 8vo, 21s. net.

A HANDBOOK OF OPHTHALMIC SCIENCE AND PRACTICE.

By HENRY E. JULER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital; Surgeon to the Royal Westminster Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the London Lock Hospitals.

BRITISH MEDICAL JOURNAL.—"We are delighted to welcome the third edition of an old and favourite text-book. ..... The book has preserved all the characteristics which deservedly made the earlier editions so popular. ..... Altogether it has more than kept up its reputation as a STANDARD TEXT-BOOK."

DISEASES AND INJURIES OF THE EYE, with their Medical

and Surgical Treatment. By GEORGE LAWSON, F.R.C.S. Eng., Surgeon-Oculist in Ordinary to Her late Majesty Queen Victoria; late Member of the Council of the Royal College of Surgeons of England; Consulting Surgeon to the Royal London Ophthalmic Hospital and to the Middlesex Hospital. SIXTH EDITION, with 249 Illustrations. Revised, and in great measure re-written, by ARNOLD LAWSON, F.R.C.S. Eng., Assistant Surgeon to the Royal London Ophthalmic Hospital; Ophthalmic Surgeon to the Paddington Green Children's Hospital. Royal 8vo, 15s. net.

BRITISH MEDICAL JOURNAL.—"As a text-book we trust it will have the popularity it undoubtedly deserves. We most heartily congratulate Mr. Lawson on the production of this volume, which is a thoroughly reliable guide for students and practitioners."

LANCET.—"We have no hesitation in expressing the opinion that the treatise is a thoroughly trustworthy guide to the student and practitioner, and a valuable addition to the ophthalmological literature of this country."

A TREATISE ON THE SCIENCE & PRACTICE OF MIDWIFERY.

By the late W. S. PLAYFAIR, M.D., LL.D., F.R.C.P., Physician-Accoucheur to H.I. and R.H. the Duchess of Saxe-Coburg and Gotha (Duchess of Edinburgh); Emeritus Professor of Obstetric Medicine in King's College; Consulting Physician for the Diseases of Women and Children to King's College Hospital, to the General Lying-in Hospital, the Evelina Hospital for Children, &c.; late President of the Obstetrical Society of London; Examiner in Midwifery to the Universities of Cambridge and London, and to the Royal College of Physicians. NINTH EDITION. With over 200 Illustrations and 8 Plates. 2 vols., demy 8vo, 28s.

A SYSTEM OF OBSTETRIC MEDICINE AND SURGERY. Theo-

retical and Clinical. For the Student and Practitioner. By ROBERT BARNES, M.D., Consulting Obstetric Physician to St. George's Hospital, &c.; and FANCOURT BARNES, M.D., Consulting Physician to the Royal Maternity Charity, London, &c. Two vols., with numerous Illustrations, 8vo. Vol. I., 18s. Vol. II., 20s.

A MANUAL OF MIDWIFERY FOR MIDWIVES. By Fancourt

BARNES, M.D., Consulting Physician to the Royal Maternity Charity, London. With numerous Illustrations. NINTH EDITION. Crown 8vo, 6s.

A DICTIONARY OF PRACTICAL SURGERY. By various British

Hospital Surgeons. Edited by CHRISTOPHER HEATH, F.R.C.S., Holme Professor of Clinical Surgery in University College, London; Surgeon to University College Hospital; Member of the Council and Court of Examiners of the Royal College of Surgeons of England. THIRD EDITION 2 vols., royal 8vo, 32s., cloth; or half-morocco, marbled edges, 42s.

ANTISEPTIC SURGERY; its Principles, Practice, History, and

Results. By W. WATSON CHEYNE, M.B., F.R.C.S., Assistant Surgeon to King's College Hospital, and Demonstrator of Surgical Pathology in King's College. With 145 Illustrations, 8vo, 21s.

AUSCULTATION AND PERCUSSION, together with other

Methods of Physical Examination of the Chest. By SAMUEL GEE, M.D. FOURTH EDITION, with Illustrations, fcap. 8vo, 6s.

A COURSE OF PRACTICAL HISTOLOGY. By Edward Albert

SCHÄFER, LL.D., F.R.S., Jodrell Professor of Physiology in University College. SECOND and CHEAPER EDITION, with numerous Illustrations, crown 8vo. 7s. 6d.

ELLIS'S DEMONSTRATIONS OF ANATOMY: Being a Guide to

the Knowledge of the Human Body by Dissection. Edited and Revised by G. D. THANE, Professor of Anatomy, University College, London. ELEVENTH EDITION, with 252 Illustrations, small 8vo, 12s. 6d.

CLINICAL MANUAL FOR THE STUDY OF MEDICAL CASES.

Edited by JAMES FINLAYSON, M.D., LL.D., President of the Faculty of Physicians and Surgeons, Glasgow, &c. With Special Chapters by Sir W. T. GAIRDNER, K.C.B., F.R.S., Emeritus Professor of Medicine in the University of Glasgow, on the Physiognomy of Disease; Professor ALEXANDER ROBERTSON, St. Mungo's College, Glasgow, on Insanity; the late Professor COATS on the Throat; Professor STEPHENSON, University of Aberdeen, on Disorders of the Female Organs; Dr. SAMSON GEMMELL, Professor of Clinical Medicine in the University of Glasgow, on Physical Diagnosis. THIRD and CHEAPER EDITION, Revised, with Illustrations, crown 8vo, 8s. 6d.

A JUNIOR COURSE OF PRACTICAL ZOOLOGY. By the late

A. MILNES MARSHALL, M.D., D.Sc., M.A., F.R.S., Professor in the Victoria University, &c.; and the late C. HERBERT HURST, Ph.D., Demonstrator and Assistant Lecturer in Zoology, Owens College, Manchester. FIFTH EDITION, Revised by F. W. GAMBLE, M.Sc., Demonstrator and Assistant Lecturer in Zoology, Owens College, Manchester. With Illustrations, crown 8vo. 10s. 6d.

VERTEBRATE EMBRYOLOGY: a Text-Book for Students and

Practitioners. By the late A. MILNES MARSHALL, M.D., D.Sc., M.A., F.R.S., Professor in the Victoria University; Lever Professor of Zoology in Owens College; late Fellow of St. John's College, Cambridge. With numerous Illustrations, 8vo. 21s.

THERAPEUTICS: ITS PRINCIPLES AND PRACTICE. By Horatio

C. WOOD, M.D., LL.D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System in the University of Pennsylvania, and HORATIO C. WOOD, Junr., M.D., Demonstrator of Pharmacodynamics in the University of Pennsylvania. A work on Medical Agencies, Drugs, and Poisons, with especial reference to the Relations between Physiology and Clinical Medicine ELEVENTH EDITION, remodelled, and in greater part rewritten, 8vo, 18s.

ENGLISH SANITARY INSTITUTIONS REVIEWED IN THEIR

COURSE AND DEVELOPMENT AND IN SOME OF THEIR POLITICAL AND SOCIAL RELATIONS. By Sir JOHN SIMON, K.C.B., D.C.L. Oxford, LL.D. Camb. & Edin., M.D. Hon. Dublin, M.Chir.D. Hon. Munich, Consulting and Past Senior Surgeon to St. Thomas's Hospital; formerly Medical Officer of Her Majesty's Privy Council; and lately Crown Member of the General Medical Council, &c. SECOND EDITION, demy 8vo, 18s.

*** *Messrs. SMITH, ELDER & CO. will be happy to forward a copy of their Catalogue post free on application.*

London: SMITH, ELDER & CO., 15 Waterloo Place, S.W.

INDEX—(CONTINUED).

PAGE

BATHS:—
Badgastein ... 92
Bad Wiesungen, Germany ... 92
Bath Nauheim ... 87
Moffat Hydropathic ... 92
Piombieres ... 90
Smedley's Matlock ... 92
Waldhaus Flims, Switzerland ... 92
Woodhall Spa Baths ... 90

FINANCIAL &c.:—
Birkbeck Bank ... 81
English and Scottish Law Life Office.. 81
Equitable Reversionary Interest Soc. 81

HOMES, &c., WANTED:—
Medicus, Glasshouse-street ... 91
No. 709, L.O., Strand ... 91

HOTELS:—
Berton Court Hotel, New Milton ... 85
Ilfracombe—Ilfracombe Hotel ... 93
Montreux Hotel and Chateau, Belmont 88

HOUSE & ESTATE AGENTS:—
Duncan, Guilford-street ... 98
Eagle Lodge, Ramsgate ... 99
Elliott, Son, & Boyton, Vere-street .. 8:
Fuller, Weymouth ... 98
Gillows, Oxford-street ... 93
Landlord, West Dulwich ... 99
No. 710, L.O., Strand ... 99
No. 772, L.O., Strand ... 99

PAGE

HOUSE AGENTS (Continued).
Consulting-Rooms:—
Faro, Manchester-square ... 98
No. 697, L.O., Strand ... 98
No. 710, L.O., Strand ... 99

LIFE & FIRE ASSURANCES:—
Prudential ... 81

MASSAGE:—
Newport, Upper Montagu-street 81

MEDICAL ACCOUNTANTS &c.:—
Turner ... 98

MEDICAL AGENTS:—
Hall & Hardwicke ... 97
Lee & Martin ... 94
London Medical Agency ... 97
Manchester Medical Agency ... 97
Medical Agency ... 97
Moore ... 94
Needes, Herbert ... 98
Needes, J. C. ... 94
Orridge ... 98
Peacock & Hadley ... 99
Schoinatic, Clerical, &c., Assoc. ... 96
Turner ... 95
Wilson & Son ... 97

MEDICAL SCHOOLS (LONDON):—
Cooke's School of Anatomy ... 79
West London Post-Graduate College.. 79

PAGE

MEDICAL SCHOOLS (PROVINCIAL):—
University of Birmingham ... 78

NURSING INSTITUTES:—
Clapham and Brixton Nursing Association ... 82
General Lying-in Hospital, Lambeth 82
General Nursing Institution ... 81
Gower, Weymouth-street ... 81
Hos. for Sick Children, Gt. Ormond-st 81
Incorporated Society of Trained Masseuses ... 81
Leeds Trained Nurses' Institution ... 82
London Nurses' Association ... 82
Male and Female Nurses' Assoc. ... 82
Male Nurses' Association ... 82
Male Nurses' Co-operation ... 82
Middlesex Hos. Trained Nurses' Inst 82
Nurses' Co-operation, Portland-place 81
Queen Charlotte's Lying-in Hos. ... 81
Registered Nurses' Society ... 82
St. John's House ... 82
Temperance Male and Female Nurses' Co-operation ... 81
Temperance Male Nurses' Co-operation ... 82

OFFICIAL NOTICES:—
Aberdeen University Club ... 79
Central London Throat, &c., Hos. ... 79
Epsom College ... 79
Examination Hall ... 79
George Henry Lewis Studentship ... 80

PAGE

OFFICIAL NOTICES—(Continued).
Indian Medical Service ... 79
King's College, London ... 79
London Throat Hospital ... 79
Medical Defence Union, Ltd. ... 79
Medical Department of the Navy ... 79
Mount Vernon Hos. for Consumption 78
Naval Medical Examination ... 80
Royal London Ophthalmic Hospital.. 78
Samaritan Free Hos. for Women ... 78
St. John's Hos. for Skin Diseases ... 80
Surgical Aid Society ... 78
University College, London ... 78
Western Skin Hospital, Great Portland-street ... 79

PARTNERSHIPS & PRACTICES.. 80

RAILWAY & STEAMSHIP CO.'S:—
Albion S.S. Co.—Norway ... 81
Great Eastern Railway—
Tours in Holland, Belgium, &c. .. 81
New Zealand Shipping Co. ... 81
Orient-Pacific Line Pleasure Cruises. 81
Royal Mail Steam Packet Co.—Tours 81

SCHOOLS, PREPARATORY, &c.:—
Manchester Physical Training College 80

TUTORS & LECTURERS:—
Behnke ... 80 | Scott ... 80
Duchesne ... 80 | No. 593, L.O. .. 80
Fellowships ... 80 | Vacancies ... 80
Gooch ... 80, 81 | Weymouth ... 79

TRADE AND MISCELLANEOUS ADVERTISEMENTS.

COVER.

CHEMISTS & DRUGGISTS:—
Carrington Wellcome & Co.—
Substitution ... iv
Cook & Co.—
Antiseptic soap ... ii
McKesson & Robbins—
Compound Stearate of Zinc ... iii
Vinolia Co., Ltd.—
Vinolia Shaving Soap ... ii

WATCHMAKERS, &c.:—
Smith & Sons, Ltd.—
All English "Doctor's" Watch .. iii
The "Strand" All English Lever iii
Motor Timepiece ... iii

ANATOMICAL MECHANICIANS:—
Gresmith's Artificial Legs &c. ... 76
Muller—Artificial Eyes ... 101

BOTTLE MERCHANTS:—
Isaacs ... 74
Islington Glass Bottle Company ... 74
Kilner Brothers, Ltd. ... 101

CARRIAGES, HORSES, &c.:—
Armstrong—
Coachmen's and Grooms' Liveries 20
Cortland Wagon Co.—
Henrietta Gig ... 22
De Dion-Bouton—Motor Cars ... 23
Duryea Co.—
Duryea Power Carriages ... 21
Humber Ltd.—Motors ... 22
Imperial Accident Insurance Co.—
Carriage Insurance, &c. ... 19
Lacre Motor Co. Co., Ltd.—
Motor Cars ... 20
Maynard & son—
Medical Dog Cart Phaeton ... 19
Pellant—Motor Cars ... 19
Sidges—Single Opening Brougham .. 19
Speedwell Motor Co.—
Speedwell Car ... 23
St. John Ambulance—
Invalid Carriages ... 19
W., Blackheath—
Doctor's Petrol Victoria ... 19

CHEMISTS & DRUGGISTS:—
Allen & Hanburys—
Castor Oil ... 69
Antikamia, Sorin, &c. ... 48
Byrin Amara ... 45
Armour & Co.—
Suprarenalin Solution ... 57
Battle & Co.—Bromidia ... 60
Bayer Co.—
Veronal ... 63
Citarin ... 63
Mesotan ... 63
Aspirin ... 63
Helmitol ... 63
Protargol ... 65
Brin's Oxygen Co.—Brin's Oxygen.... 60
Bullock & Co.—
Pepsina Purpurea ... 92
Acid Glycerine of Pepsine ... 89
Burgoyne, Burbidges & Co.—
Duotal ... 70
Salocreol ... 70
Burroughs, Wellcome & Co.—
Kepler Malt Extract ... 48
Tabloid Thyroid Gland Substance 51
Christy & Co.—
Glyco-Thymoline ... 84
Comar & Son
Nourry's Iodinated Wine ... 63
" Syrup ... 63
Cacodylate of Sodium (Clin) ... 65
Lecithine (Clin) ... 63
Cox & Co.—
Lithia Tablets ... 88
Duncan, Flockhart & Co.—
Chloroform ... 92
Chloryl Anæsthetic ... 92

CHEMISTS—(Continued.)
Fellows—Syr. Hypophos. Co., Fellows 62
Gale & Co.—
Sugonum ... 71
" Antiseptics ... 71
General Apothecaries Co.—
Elixir Terpeni Co. ... 60
Mist. Chloral c. Hyoscyam. Comp. 60
Linctus Limonis ... 60
Syrup. Glycerophosphatum Comp. 60
Special Notice, &c ... 60
Giles, Schacht & Co.—
Bisedia ... 73
Hewlett & Son—
Mist. Magnesiæ Co. c. Bismutho .. 61
Liq. Santal. Flav. c. Buchu et Cubeba ... 64
Huggins—Ozone Paper for Asthma .. 71
Kreschye Co.—Hard Sooro-Glyceride 70
Lambert Pharmacal Co.—
Listerine ... 59
Maltine Manufacturing Co.—
Maltine ... 49
" with Cod Liver Oil ... 49
Martin H. Smith Co.—
Glyco-Heroin ... 55
Matthaei & Co.—Dry Yeast ... 75
Meister Lucius & Bruning—
Hypnal-Roschal ... 31
Argonin ... 31
Tumenol ... 31
Cyramidon ... 31
Salocreol ... 31
Trigemin ... 31
Alumnol ... 31
Benzonol ... 31
Midgley, Ltd.—
Midgley's Medicated Soaps ... 29
Newbery & Sons—
Glycobenphene-Hell ... 60
Borobenphene-Hell ... 60
Parke, Davis & Co.—
Acetozone ... 43
Nuclein ... 42
Price's Patent Candle Co., Ltd.—
Toilet Soaps ... 54
Salmon & Co.—
Slinger's Nutrient Suppositories .. 71
Sebman—Antidiphtheritic Serum, &c. 74
Savory & Moore—
Pancreatic Emulsion ... 89
Scott & Bowne—Scott's Emulsion ... 64
Squire & Sons—
Arsenate of Iron ... 41
Kasak Elixir ... 41
Cyclax ... 41
Formanginblit ... 41
Tamar Indian Cotton ... 70
Wand Manufacturing Co.—
Pills, Tablets, Capsules, &c. ... 70
Wilcox & Co.—
Santal-Midy ... 60
Dusart's Syrup of Lacto-Phosphate 60
Morrhuol ... 60
Morrhual-Creasote ... 60
Apioline ... 60
Grimault's Cigarettes ... 60
Crystallised Digitaline ... 61
Cigars de Joy ... 61
Pancreatic Emulsion ... 61
Willows, Francis, Butler & Thompson—
Suprarenal Medulla ... 61
Liquor Resacyptin ... 61
Polactin ... 73
Zimmerman, A. & M.—
Schering's Glycerophosphates ... 73

EMBALMERS:—
Pearce ... 74

FOODS:—
Allen & Hanburys—
Allenburys Milk Foods ... 47
" Malted Foods ... 47
Aylesbury Dairy Co.—
Humanised Milk ... 52
Benger's Food ... 87
Batchley's Diabetic Preparations ... 87
Bovril, Limited.—Invalids Bovril ... 18
Cadbury's Cocoa ... 50

FOODS—(Continued.)
Callard & Co.—New Diabetic Foods .. 72
Carnrick & Co.—
Liquid Peptonoids ... 49
Coleman & Co.—
Wincarnis ... 72
Fletcher, Fletcher & Co.—
Vibrona ... 87
Frame Food Co.—Frame Food ... 27
International Fibrocura, Ltd.—
Plasmon ... 55
" Cocoa ... 55
" Arrowroot ... 57
Maltco Food Co.—Maltco ... 73
Mosley & Co.—
Hæmatogen ... 79
Protene Foods ... 72
Raimes, Clark & Co.—
Revalenta Food ... 18
Robinat Co.—Robonat ... 101
Savory & Moore—
Peptonised Milk ... 79
" Cocoa and Milk ... 79
" Coffee & Milk ... 79
" Milk-Chocolate ... 80
Smith & Co.—Hall's Wine ... 86
Tibbles' Vi-Cocoa, Ltd.—Vi-Cocoa 64
Valentine's Meat Juice Co.—
Meat Juice ... 102
Van Abbott & Sons—
Foods for Diabetics and Obesity .. 69
Welford & Sons—
Antiseptic Milk Supply ... 67
Wilcox & Co.—
Mariani Wine ... 61
Desiccated Extract of Malt ... 61

FURNITURE, &c.:—
Casto—Invalid Furniture ... 26
Maple & Co.—
Household Linens ... 24

HOSIERS, &c.:—
Samuels—Shirts and Collars ... 74

MED. & SURG. APPLIANCES:—
Allen & Hanburys—
Tallqvist's Hæmoglobin Scale 28
Bailey & Son—
Abdominal Belts ... 25
Infants' Fitments ... 25
Burroughs, Wellcome & Co.—
Aseptic Hypodermic Syringe 80
Down Bros.—
Surgical Hand Motor, &c. ... 28
Downing—Radiant Heat and Light Treatment ... 75
Ernst—Orthopædic Apparatus ... 70
Scotland—Instep Arch Seats ... 77
Symms & Newmann—Bandages ... 18
Macfarlan & Co.—
Formaline Sterilised Catgut ... 71
Marconi's Wireless Telegraph Co.—
Induction Coils ... 102
Millikin & Lawley—Osteology, &c. .. 77
Nodine—
Fermentation Saccharometer 77
Pond—Arch Support Socks ... 77
Pope & Plante—
Elastic Stockings ... 101
Abdominal supporting Belts ... 101
Robinson & Sons—Tongue Tissue 18
Sanitas Electrical Co.—
Light baths ... 19
Dermo and Triplet Lamps ... 19
Scales & Co.—
Kentbury Patent Medical Bag ... 77
Sykes, Josephine & Co.—
Corsets and Belts ... 77
Watson & Sons—
High Frequency Apparatus ... 75
Wood—Insole ... 19

MINERAL WATERS:—
Æsculap Bitter Water Co.—Æsculap.. 65
Apollinaris Co.—Apollinaris ... 54
Arabella, Ltd.—Arabella ... 72
Barrow's Malvern Waters ... 18
Camwal, Ltd.—Camwal ... 19

MINERAL WATERS—(Continued).
Cheltenham Pavilion ... 72
Davis—Tarasp Water ... 73
Hogg & Son—Aërated Lysidine Water 73
Ingram & Royle—
Vichy ... 65
Salutaris Water Co.—
Salutaris Water ... 64

PHOTOGRAPHY:—
Martin—Developing Rollable Film .. 104

PRINTERS & ENGRAVERS:—
Cooke & Co.—
Brass Name Plates and Lamps 77
Quilston—
Brass Door Plates ... 101
Heraldry, &c. ... 101

SANITARY APPLIANCES &c.:—
Aymard Patent Milk Sterilizer Co.—
Milk Sterilizer ... 25
Fasset & Johnson—
Iodo-Kalvet ... 62
Marlowe, Gilbert & Co.—
Steam Disinfectors ... 75
Wright, Layman & Umney—
Liquor Carbonis Detergens ... 53

STATIONERY, &c.:—
John Heath & Co.—Pens ... 75

TAILORS, BOOTMAKERS, &c.:—
Built—
Frock Coat and Vest ... 18
Lounge and Tweed Suitings ... 18
Dowie & Marshall—Boots ... 75
Evans & Co.—
Riding and Polo Breeches ... 24
Frock Coats ... 24
Fisher & Sons—
Frock Coat and Vest ... 18
Trousers ... 18
Hamilton & Co.—
Paramount Overcoat ... 18

TOBACCO, CIGARS, &c.:—
Ardath Tobacco Co.—Cigars ... 73

TYPEWRITING, &c.:—
Automatic Typewriting Agency, Limited ... 18
Machine Trading Co.—
Typewriters ... 18
Metropolitan Typewriting & Agency, Chancery-lane ... 19
Remington Typewriter Co.—
Card Index ... 19

VACCINE LYMPH:—
Faulkner's Calf Vaccine Institution .. 74
Milne—International Calf Vaccine ... 74
Jenner—Institute for Calf Lymph 74
Robinson—Pure Aseptic Glycerinated Calf Lymph ... 74
Renner's Calf Lymph Establishment.. 74
Weyers, Ltd.—Calf Lymph ... 74

WATCHMAKERS, &c.:—
Jenner—Doctor's English Watch 76

WINES, BEER, SPIRITS, &c.:—
Black & Co.—"Old" Diabetic Whisky 71
Danville's Irish Whisky ... 76
Fenner's Liqueur Brandy ... 72
Harvey Co.—Pale Ale ... 94
Martell's Three Star Brandy ... 68
Rose's Lime Juice ... 66

MISCELLANEOUS:—
Fatigue Fitting Co.—
Doctor's Medicine Cupboard, &c. 103
Herschell—
Bovril Static Machine, &c. ... 104
Osborne, Garrett & Co.—
Kropp Razors ... 76
P., Balham—Attention ... 10

The Goulstonian Lectures

ON

SOME DISORDERS OF THE BLOOD AND BLOOD-FORMING ORGANS IN EARLY LIFE.

Delivered before the Royal College of Physicians of London on March 8th, 10th, and 15th, 1904.

BY ROBERT HUTCHISON, M.D. EDIN., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE LONDON HOSPITAL, ETC.

LECTURE I.

Delivered on March 8th.

MR. PRESIDENT AND GENTLEMEN,—In no department, perhaps, of medical science has the progress of our knowledge been so rapid of recent years as in that which is concerned with the study of the blood and its disorders. Alike from a microscopical and from a chemical point of view great advances have been made and the march forward still goes on. Last year, it will be remembered, my predecessor in this lectureship gave to the College an able and exhaustive summary of one important branch of the subject—namely, the part played by the blood in the maintenance and production of immunity, and it may perhaps be felt that his successor would have done well to turn his attention to fresh fields and to new pastures. I venture to think, however, that in that corner of the field which I have selected for consideration—the disorders of the blood and blood-forming organs in early life—something still remains to be done. No one, I am sure, who sees much of disease in children can fail to feel how much obscurity still enshrouds many of these affections. Accordingly when I was honoured by an invitation to deliver the Goulstonian lectures for this year I felt that as one who has long been greatly interested in this subject and who has been fortunate in ample opportunity for its study I could not do better than take it as my theme even although I felt far from confident of my ability to throw any fresh light upon it. Without further apology then I propose to address myself to the task which lies before me.

CHARACTERS OF THE BLOOD IN INFANCY.

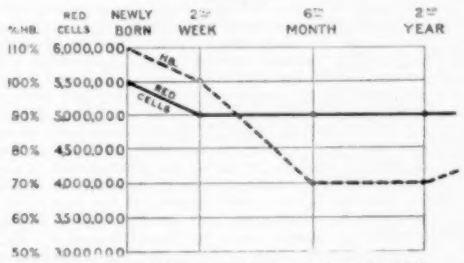
We can only hope to approach our subject in a satisfactory way by first glancing briefly at the characters of the blood and hæmopoietic organs in health during the first few years of existence. In doing so I must apologise if I describe facts which are already well known to an audience such as this, but a preliminary agreement upon some fundamental points regarding the development and histology of the blood and blood-forming organs is absolutely essential. In addition to this the study of blood formation in early life is worth making for its own sake, for it helps to throw light not only on the diseases of the blood met with in adult life but also on some of the fundamental problems of nutrition.

THE RED CORPUSCLES AND HÆMOGLOBIN.

The infant starts life with a number of red corpuscles considerably in excess of that met with in the adult, the average for the first day being about 5,500,000 per cubic millimetre. The appearance of this excess is a phenomenon of sudden occurrence, for the fœtal blood is not richer but poorer than the maternal in red cells up even to the very end of intra-uterine life. The causes of this sudden enrichment of the blood on the entrance of the child into the world have been much discussed but do not materially concern us now. It may be said, however, in brief that there are probably several factors at work in its production, amongst which are: (1) a desiccation of the blood from loss of fluid by evaporation after birth; (2) aspiration of blood out of the placenta by the first acts of respiration; and (3), and perhaps most important of all, a sudden increase in activity of the blood-forming organs, an increase which coincides with a general increase of metabolism and which is rendered necessary by the demand for a larger supply of oxygen which the change from pre-natal to post-natal life entails. The marked excess of red cells is, however, not of long continuance. Very quickly it passes off, partly, it would seem, in consequence of an active destruction of red cells, partly from dilution of the blood which ensues upon the taking of liquid nourishment, and by the second week the adult figure of 5,000,000 per cubic millimetre is reached and persists with remarkable uniformity throughout the rest of life. The percentage of hæmoglobin at birth is in proportion to the great richness of the blood in red cells and amounts on an average to 110 per cent. Some observers even go so far as to say that the "worth" of each corpuscle is higher at birth than at any subsequent period. Richness in hæmoglobin is a characteristic even of the fœtal blood, each corpuscle in the fœtus containing a quarter more hæmoglobin than a maternal corpuscle (Cohnstein and Zuntz). It falls rapidly in the first week proportionally to the fall in the red cells and mainly from destruction of the latter.

The products of destruction of the excess of hæmoglobin have probably much to do with the production of that familiar condition, icterus neonatorum. The bile, as is well known, is the vehicle for the excretion of broken-down blood and when the latter is suddenly liberated in large amount, as it is during the first week of life, the viscidity of the bile may be so much increased in consequence that it stagnates in the ducts and being in part re-absorbed gives rise to icterus. It seems not improbable, however, that the whole of this hæmoglobin is not wasted but that the iron contained in it is stored up in the liver and made use of again in the formation of new blood pigment. Up to the second week of life the number of red cells and the percentage of hæmoglobin run parallel but after that time this parallelism ceases. Whilst the red cells continue, as we have seen, fairly stationary the percentage of hæmoglobin continues steadily to fall and reaches a minimum of 70 per cent. after the sixth month of life. (See Chart 1.) This low figure persists throughout the whole

CHART 1.



Proportion of hæmoglobin and red corpuscles throughout infancy.

of infancy and it is only with the beginning of the second year that a gradual rise makes its appearance which persists until the adult standard is at last reached somewhere about the sixth year or even later. This comparative poverty in hæmoglobin is one of the most striking characteristics of the blood of the young child. The formation of blood pigment seems to lag behind that of red cells, so that the worth of each corpuscle is lower in the child than in the adult. The explanation of this is not quite clear. In part it may be due to a notable deficiency of iron in the diet of infancy, a point to which we shall return later, but it would be rash to assume that this is the whole explanation, for such an assumption implies that the blood in infancy is not perfectly adapted to its functions and that the marrow would form more hæmoglobin if it could. Such an explanation might hold good for pathology but not for a condition of health. On the other hand, it is not unlikely that the disproportion between the red cells and hæmoglobin in infancy is an adaptation to facilitate oxidation. The child requires relatively more oxygen than the adult alike because of its rapid growth and because owing to its large surface it has to produce much heat, and it may well be that the rapid interchange of gases in the lungs is best met by having a moderate amount of hæmoglobin distributed in a large number of corpuscles and so insuring the exposure of an extensive surface to the air in the alveoli. The amount of hæmoglobin would thus be the index of the true blood-need of the child and the relatively large number of red cells a device to make that amount as serviceable as possible. At all events, whatever the true explanation may be, the comparatively chlorotic

condition of the blood in infancy is a fact of the greatest importance in the study of the blood disorders of this period of life, for as we shall see later this physiological condition may readily become exaggerated in states of disease.

The histology of the red cells in childhood need not detain us long. It is stated by many writers that they differ from those of the adult in exhibiting a tendency to inequality of size, which need not surprise us when we remember that they are probably being "minted" at enormously high speed, but such inequalities are probably of little significance. More striking is the appearance of nucleated corpuscles in the blood of the infant during the first few days of life. These are no doubt survivors of corpuscles which have been born in utero, but their complete disappearance within the first three days of life—after which they are usually no longer present—testifies to the extremely rapid blood destruction which is going on at this time.

One quality of the red cells remains to be discussed and that is their power of resistance to unfavourable conditions: in a word, are the red cells of the child more vulnerable than those of the adult? This is a question of which so far as I am aware no experimental solution has yet been attempted but it is well worthy of consideration. When we come to the study of the secondary anæmias of infancy I shall have occasion to bring forward pathological evidence in favour of the view that this greater vulnerability has an existence in fact, and if it be so it is probably to be explained by the more rapid formation of red cells in the child, a rapidity of formation which leads to their being turned out into the blood half fledged, as it were, and less capable of resisting destructive influences.

PLACE OF ORIGIN OF THE RED CELLS.

There are two stages of red blood formation during intra-uterine life: (1) an embryonic stage in which the blood-vessels and perhaps also the liver are the sites of formation; and (2) the fœtal stage proper in which red cells are formed in the liver, spleen, and bone marrow. These two stages pass into one another about the fourth month of intra-uterine life but as development goes on a process of specialisation of function takes place in which the bone marrow gradually becomes the sole site of formation. This stage is reached by the time birth takes place and I have certainly not been able to find any evidence either from my own observations or those of others that the liver and spleen take any active share in blood formation after extra-uterine existence has begun. This specialisation of function, however, is, in the case of the child, an arrangement of such recent establishment that it is easy, whenever a greatly increased demand for red cells occurs, for the monopoly of the marrow to be overthrown and for the liver and spleen again to take an active share in blood formation. Many writers believe, as a matter of fact, that this is a frequent occurrence in cases of profound anæmia in childhood. In the adult, as is well known, the territory of marrow given up to the formation of red cells is strictly limited and occupies besides the whole of the flat or spongy bones only the ends of the long bones. In the child, however, the area of the red marrow is much more extensive. Appearing at the centre of the diaphysis of the long bones about the end of the sixth month of intra-uterine life the red marrow spreads throughout the whole bone and for the whole period of infancy the entire shaft is filled with it. Gradually as growth goes on and as the primary cancellous tissue gives place to the permanent medullary cavity fat begins to make its appearance, but up to the period of puberty—in fact, until the growth of the bones is nearly completed—a considerable amount of red marrow is still present.

The wide extent of the red marrow in childhood is noteworthy for more reasons than one. In the first place it has a practical bearing on the morbid anatomy of the diseases of the blood at this time of life. For if one finds the whole shaft of a long bone occupied by red marrow one must not conclude, as one would be justified in doing in the case of an adult, that there has been during life an increased formation of red cells going on. That is so obvious as perhaps hardly to need to be pointed out. In the second place, it has an important physiological meaning, for if the whole of the marrow of the long bones in childhood is already occupied in the manufacture of red corpuscles there can be no reserve power of formation as there is in the adult. In the mature bones there is a large space normally filled with fat upon which the red marrow can encroach when there is any demand for a more rapid formation of red corpuscles. This takes place conspicuously in pernicious anæmia in which, as is well known, the whole of the shafts of the long bones may become filled with red marrow. But this cannot happen in the young child who, in consequence, must live more up to the limits of his blood-forming capacity. This may perhaps explain why children stand hæmorrhage badly and why it is that they are very apt to become anæmic on slight provocation. To this point we shall return in considering the secondary anæmias

THE LEUCOCYTES.

In considering the number and variety of white cells met with in the blood of infancy it will be necessary for the sake of clearness to begin with their histological classification. Following the plan first introduced by Ehrlich and now generally adopted we can divide the white cells into the two great divisions of granular and non-granular. The first of these divisions includes the polynuclear neutrophile and eosinophile leucocytes, the characteristics of which in the child are exactly the same as in the adult and are too well known to need any description here. It is when we come to the second division that complications begin to creep in. There is no greater desideratum in hæmatology at the present moment than for some common agreement to be arrived at in the nomenclature of the non-granular white cells. One gets hopelessly confused in reading the literature of the subject to find the same cell described under several different names or the same name applied to several different cells. We badly need more light here and to have our ideas clarified as to the mutual relations of the different cells belonging to this class. Meanwhile it is the duty of everyone who writes on the subject to define clearly the meaning of the terms which he intends to employ. I propose throughout these lectures to adopt the following classification of the non-granular cells of the blood:—

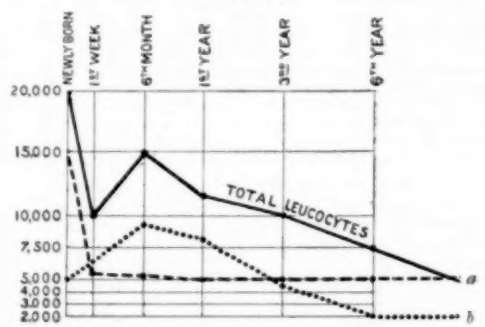
1. *Lymphocytes*, meaning cells about the size of, or rather smaller than, a red corpuscle with a deeply staining nucleus which occupies nearly the whole of the cell and only a small margin of feebly basophile non-granular protoplasm.

2. *Large lymphocytes*, being cells larger in size than a red corpuscle, with a nucleus which stains more diffusely than in the ordinary lymphocyte and a small ring of basophile protoplasm. These cells are not found normally in the blood of the adult but I believe that they are always present though in small number in infancy. All stages can be recognised between small and large lymphocytes. The large lymphocyte is probably a less mature form than the small.

3. *Large mononuclears*, cells varying from 8 to 12 μ in diameter with a large round or oval nucleus which stains rather faintly and a relatively broad margin of clear protoplasm which stains only "greyish" with methylene blue.

4. *Transitionals*, which resemble the above except that the nucleus is deeply indented.

CHART 2.

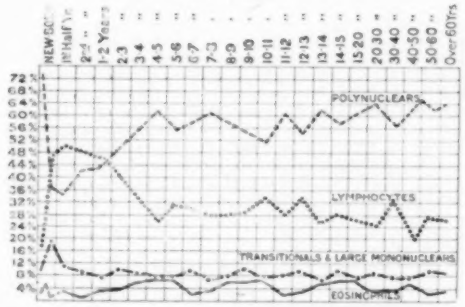


Absolute number of leucocytes per cubic millimetre at different ages. *a*, Polynuclears. *b*, Lymphocytes.

As regards their *character* it will be noticed that these cells are, with the exception of the large lymphocytes, identical with the white cells commonly met with in the blood of the adult. It is when we come to consider their numbers, however, that striking differences become manifest and here I should like to point out, as has already been done by Phear, that it is not sufficient to make merely a differential percentage count of the white cells in the blood, for

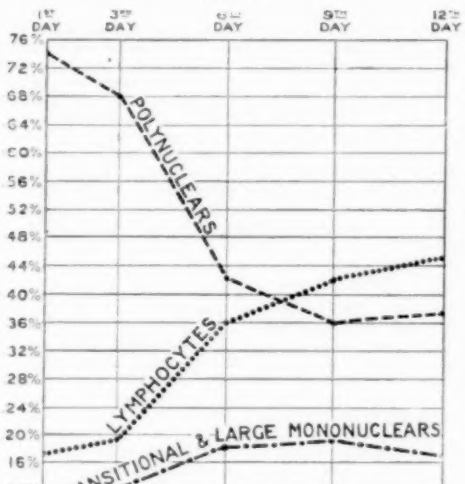
one is then apt to get a totally erroneous idea of the true state of affairs. A high percentage of any one kind of cell due to an absolute increase of its numbers in the blood makes all the other cells appear relatively diminished, although in reality their absolute number may be unaffected. What we want, then, is the absolute numbers of the different kinds of white cell in the blood at different ages. In Chart 2 these numbers are graphically represented. It will be observed that in the newly born infant the total number of leucocytes is greatly increased compared with that in the adult and amounts to about 20,000 per cubic millimetre. Further examination shows that this pronounced leucocytosis is due to a high absolute number of polynuclear cells. During the first week

CHART 3.



Differential percentage counts throughout life. (After Carstanjen.)

CHART 4.



Differential percentage counts during the first fortnight. (After Carstanjen.)

of life, however, this number rapidly declines, with the result that the total number of white cells falls to about one-half what it was just after birth. A second rise then sets in which persists till the sixth month but this rise is due to the appearance in the blood stream of an increased number of mononuclear cells, chiefly lymphocytes. After the sixth month the number of lymphocytes slowly declines, and with them the total number of white cells, until about the sixth year the figures characteristic of adult life are reached. Differential percentage counts bring out the same facts. (See Charts 3 and 4.)

To summarise, then, we have to deal with a polynuclear leucocytosis most marked just after birth and gradually falling off during the first week followed by a slow rise in the non-granular cells which reaches its maximum about the sixth month but which persists in a less pronounced form throughout the whole period of infancy. The granular cells reach by the end of the first week an absolute number (about 5000 per cubic millimetre) which they maintain unaltered throughout the whole of life, whilst the non-granular cells exhibit a gradual rise up to the sixth month and have declined by the end of the third year to a number equal to that of the granular cells and not till the sixth year have they reached a stationary point—viz., about 2000 per cubic millimetre—which persists into adult life. The broad and striking conclusions to be drawn from these figures is that the blood in infancy contains an absolute excess of white cells as compared with that of the adult but that this excess (after the first week) is due entirely to a surplus of one kind of cell only—viz., the non-granular cells (chiefly lymphocytes). The significance of the initial polynuclear leucocytosis is not understood. It is a phenomenon directly associated with birth, for the blood of the fœtus during the last month of gestation contains an absolutely smaller number of white cells than that of the mother and may perhaps be due in some obscure way to the total change in metabolic conditions which birth entails. It coincides, too, with the period of active destruction of red cells already referred to and the polynuclears may perhaps be partly concerned in the removal of the débris of the latter from the circulation but that is a mere suggestion far removed from proof. The significance of the lymphocytic excess during infancy we shall be better able to appreciate when we have looked at the mode of production of the white cells as a class.

SITE OF FORMATION AND MUTUAL RELATIONS OF WHITE CELLS.

Ehrlich, whose teaching on this matter has until recently been generally accepted, drew, as is well known, a sharp line of distinction between the granular and non-granular cells of the blood. He maintained the view that the former of these are derived entirely from the bone marrow and the latter from adenoid tissue, and that the two classes of cells were absolutely distinct and never passed into one another. Recently, however, a tendency has been shown, especially by Pappenheim, Wolff, Uskoff, and others, to deny the absolutely specific nature of the granular and non-granular cells and to trace them all back to one common parent cell from which even the red corpuscles are derived. This parent type—called by Wolff a "lymphoid" cell—is almost identical in character with the large lymphocyte and is the first to appear in the fœtal blood. From it in the opinion of Wolff, all the other cells of the blood are derived according to the following scheme:—

Lymphoid cell.

- Large lymphocyte.
- Small ,,
- Erythrocytes.
- Myelocytes:
  - (a) Basophile.
  - (b) Neutrophile.
- Polynuclear leucocytes:
  - (α) With basophile granulation.
  - (β) ,, neutrophile ,,

In process of development a gradual differentiation of function takes place on the part of the blood-forming organs in consequence of which the lymphoid cells of the marrow confine themselves to the production of granular cells, whilst those of the adenoid tissue become exclusively concerned in the production of non-granular cells (lymphocytes). The specialisation, however, is never so complete but that when a demand for a greater number of cells of one type occurs the lymphoid cells in *any* blood-forming organ are able to produce that type. We shall recur to this point, however, when we come to study the leukæmias of childhood.

A study of the development of the marrow tends on the whole to confirm the above views. Up to the fourth month of intra-uterine life the marrow, according to the researches of Hammar, has merely the characters of a very vascular embryonic tissue full of branched spindle or star-shaped anastomosing cells imbedded in a homogeneous groundwork. About the beginning of the fourth month an infiltration of mononuclear leucocytes begins to appear about the middle of the diaphysis and gradually extends throughout

the whole length of the bone so that at this stage the marrow has a lymphoid character. From these cells the ordinary myelocytes appear to be developed and can be detected in the marrow by the fifth month. By the time intra-uterine development is finished the histological differentiation of the marrow would appear to be as complete as in adult life, for although lymphoid cells of the type described by Wolff can be detected at all ages, they do not seem, so far as I have been able to observe, to be more numerous in infancy than in adult life. It is reasonable to suppose, however, that although in the child as in the adult the granular cells are derived exclusively from the marrow and the non-granular cells almost, if not quite, exclusively from adenoid tissue, yet the nearer the organism stands to the fœtus the more easily can a return to fœtal conditions take place and the lymphoid cells of the marrow assume vicariously the function of producing lymphocytes and those of the adenoid tissue that of producing granular cells. We shall have occasion to see that there is much pathological evidence in favour of the view that such vicarious function on the part of the two kinds of blood-forming organs actually takes place in many at least of the blood disorders of childhood.

ACTIVITY OF THE ADENOID TISSUE IN INFANCY.

If, then, the non-granular cells of the blood are derived in the child as in the adult mainly, if not entirely, from the adenoid tissue, the absolute excess of these cells which we have seen to be characteristic of the blood in infancy must indicate an unusual degree of activity on the part of the adenoid tissue throughout this period of life. I wish to emphasise this point as strongly as I can, for I believe it to be the key to the right understanding of many of the blood disorders of early life. From the physiological point of view we have to ask ourselves: What is the meaning of this activity of the adenoid tissue? It means, of course, that there is a greater demand for lymphocytes in the blood of the child than in that of the adult, but that simply brings us to the question, What is the function of the lymphocytes? To this question, as is well known, no definite reply has yet been afforded by physiology. We know that the lymphocytes play only a minor part, if any, in the defensive mechanism of the organism. There is no reason to believe that their rôle in this respect is of any greater import in the child than in the adult, for infectious disease is attended by a purely polynuclear leucocytosis at even the very earliest periods of life. On the other hand, it has been suggested, and a considerable amount of evidence has been adduced in favour of the view, that the lymphocytes play some part in nutrition, possibly by aiding in the absorption of food. It may be that this explains the greater demand for their services in the early years of life when nutrition is so active and when the normal diet contains relatively so much fat, a constituent in the absorption of which the lymphocytes are believed to take a particularly active share. Be this as it may, it is an undoubted fact that any condition of ill-health in infancy in which nutrition is impaired or rendered difficult tends to be accompanied by an exaggeration of the normal activity of adenoid tissue manifesting itself by an over-development of the organs in which such tissue is most abundant, such as the thymus, spleen, and tonsils, and by the presence of an excess of lymphocytes in the blood. In normal circumstances the decline of lymphocytes in the blood coincides in time with the decline in the relative maximum activity of the thymus, but we shall see later that the lymphocytic character of the blood may sometimes persist beyond this period. Presumably in those cases the normal involution of the thymus is also delayed and such an occurrence is marked by delicacy of health. Pathologically the activity of the adenoid tissue is a fact of the greatest significance, for it is a well-recognised law in general pathology that the more active a tissue the more likely is it to become the seat of disease. Again and again one is struck with the fact, when viewing the blood disorders of infancy as a whole, that it is the affections of the adenoid tissue which dominate the picture; whilst in contrast to what is found in the adult, blood disorders in which the marrow is particularly involved are of rare occurrence. Thus pernicious anæmia and myelogenous leukæmia are almost unknown in early life, whilst changes in the adenoid tissue, whether in the form of local increase as in enlargement of the tonsils and the development of adenoids, or in the more grave forms exemplified by lymphadenoma, lymphatic leukæmia, and lymphosarcoma, are of comparatively frequent occurrence.

If I may gather these preliminary observations on the process of blood formation and its results in infancy to a focus I would say: 1. That the red marrow at this period of life is engaged almost to the limit of its functional capacity in the production of red cells; cells, however, which are individually less richly charged with hæmoglobin than those of the adult. 2. That the production of the granular forms of white cell goes on as in the adult in the marrow and apparently at almost the same rate of activity. 3. That the non-granular cells, on the other hand, are present in the blood of the infant in markedly larger absolute numbers than in the adult, and corresponding to this the adenoid tissue which is concerned in the production of these cells is extremely abundant, active, and widely diffused. 4. That although this specialisation of function on the part of the two great blood-forming tissues—the marrow and the adenoid tissue—has taken place in the child as in the adult, yet the former—standing nearer to the period of fœtal life—may be expected to be able under the stress of disease to revert more easily to the fœtal methods of blood formation and to exhibit in pathological conditions a less sharp degree of specialisation on the part of the marrow and adenoid tissue respectively. It is the combination of a high absolute number of non-granular cells with a relatively low percentage of hæmoglobin which constitutes the hall-mark of the infantile type of blood and in all conditions of profound anæmia in childhood these characters tend to assert themselves with even greater prominence. We are now in a position after this physiological preamble to turn to the study of the changes found in the blood and blood-forming organs in disease.

CLASSIFICATION.

The difficulty of constructing a satisfactory classification of anæmias has been felt by all writers on the subject. The difficulty is even greater when one is dealing with the blood disorders of early life than in the case of the adult owing mainly to the frequency of splenic enlargement from different causes in infancy and to the readiness with which a lymphocytosis develops in all conditions of lowered vitality at this time of life. Our ignorance of the actual cause of most blood disorders, moreover, is still too great to admit of any permanent grouping of the diseases which fall under this head. For descriptive purposes, therefore, we must content ourselves with a classification which is admittedly illogical, being founded partly on clinical and partly on pathological data. I propose, therefore, to divide the disorders of which I have to speak into the following great groups: (1) congenital abnormalities of the blood; (2) primary anæmias; (3) secondary anæmias; (4) blood disorders associated with enlargement of the spleen; (5) leukæmias; and (6) affections of adenoid tissue. We begin with:—

CONGENITAL ABNORMALITIES OF THE BLOOD.

That the blood, like any other tissue or organ, should sometimes exhibit congenital abnormalities or defects is not more than we would expect. We know, for instance, that in the condition called hæmophilia many people have postulated the existence of such a congenital abnormality. Such congenital defects would naturally fall into three divisions: (1) malformation of the blood considered as a tissue; (2) abnormalities in the total quantity of the blood or of some of its cellular constituents either in the direction of an excess or defect; and (3) abnormalities in the chemical composition of the blood. I shall deal only with the two former of these divisions, for as regards the third we are not yet in possession of sufficient data to make a consideration of it profitable.

1. *Congenital malformation of the blood* might reasonably be expected to occur as part of such congenital physical defects as affect the body as a whole. Examples of such malformation and mal-development at once rise to the mind as cretinism, Mongolism, and infantilism. The blood in cretinism has been examined by several observers without striking changes being found. Pollaci in two cases, aged seven and eight years respectively, found in one 7800 leucocytes, of which 60 per cent. were polynuclears, 25 per cent. lymphocytes, and 10 per cent. were transitional forms. In the other case the polynuclears and small lymphocytes were both about 40 per cent., whilst there was 15 per cent. of large lymphocytes present. In three cases which I have examined from the point of view of the varieties of leucocytes present I found in one (aged one year) 43 per cent. of polynuclear and 57 per cent. of non-granular cells; in another (aged three years) 30 per cent. of polynuclears and 69 per

cent. of other cells; and in a third (age nine years) 79 per cent. of polynuclears and 20 per cent. of non-granular forms. There is here, except in one instance (the second), no marked departure from the normal and in that case there was probably simple secondary anæmia present such as is met with in rickets. I know of no observations on the blood in Mongolism although the widespread malformation met with in that interesting condition might have been expected to draw attention to it. In a few well-marked cases which I have examined I found, however, no striking or characteristic change.

Turning to the third of the congenital malformations mentioned above—infantilism—one asks one's self: Does the blood in this condition preserve, like the body generally, its infantile condition? I am aware that the term infantilism is one of rather indefinite significance and that it is difficult in particular to mark it off sharply from dwarfism on one hand and infantile myxœdema on the other. All the more on that account, however, is a study of the blood likely to prove of interest and seeing that it possesses throughout the infantile period of life such marked characteristics—characteristics already fully described—we possess in it a criterion for the maintenance or otherwise of a truly infantile state of body not easily to be found elsewhere. I have examined the blood in four cases which were believed to be examples of this condition in none of which was any general anæmia present and which had all reached an age far beyond that at which the blood normally assumes the adult characters.

The first of these, a girl, aged 17 years, who exhibited the physical and mental characteristics of a child of about half that age, showed the following differential count: polynuclears, 29 per cent.; eosinophiles, 12 per cent.; and non-granular cells, 59 per cent. The second, a boy, aged nine years, who exhibited physically and mentally great backwardness for his age, showed (total 8900) polynuclears, 54·8 per cent.; eosinophiles, 3·6 per cent.; and non-granular cells, 41·6 per cent. The third, a girl, aged 18 years, who presented some features suggesting cretinism along with marked mental deficiency but who failed to respond to thyroid treatment, had in 5500 white cells per cubic millimetre, polynuclears, 66·1 per cent.; eosinophiles, 7·7 per cent.; and non-granular cells, 26·2 per cent. The fourth case was that of a girl, aged nine and a half years, who was brought because she was "not growing." Her height was only three and a half feet and her weight 2 stones 10½ pounds and physically she presented the characters of a child aged about five years. Her milk teeth were still present, the hair was rather coarse and dry, and her voice was deep and harsh but there were no signs of cretinism. She was childish and backward mentally but not in any sense imbecile. A blood film showed the presence of 60·4 per cent. of uninuclear, non-granular cells, and 39·6 per cent. of polynuclears.

It will be observed that in the first two and in the last of these cases the blood exhibited the marked excess of non-granular cells characteristic of infancy. In the third it was of the normal adult type. It may be that in the condition of the blood in these four cases we possess a means of classification and that whereas three of them should be regarded as purely infantile—i.e., in a state in which there is still the potentiality of growth—the third must be regarded as an example of development which is not so much arrested as proceeding on abnormal lines. We certainly want more information regarding possible delays in the assumption of the adult type of blood and their significance. Normally, as we have seen, this should happen somewhere between the third and sixth years but there is every reason to believe that the change is sometimes postponed until after that period. Roughly speaking, and so far as I have been able to observe, the feebler and more delicate the child the longer is the infantile type of blood maintained. On the side of the blood-forming organs this must correspond to a prolongation of the usual period of maximum activity of the adenoid tissue and there is reason to believe that such an occurrence is always an indication of delicate health and a feeble power of resistance but I shall return to this point when I come to speak of the condition known as "lymphatism."

2. *Congenital anæmias.*—Clinically, one meets from time to time with infants who have been markedly anæmic from birth. Putting aside those cases in which injudicious feeding, the repeated occurrence of diarrhœa and vomiting, or the existence of a syphilitic taint may reasonably be supposed to have induced an abnormal destruction of blood there remains a residuum of cases in which no such explanation is forthcoming. Such cases are, I admit, by no means common, but it must have fallen to the experience of everyone who sees much of disease in children to meet with them. The following are illustrative cases.

CASE 1.—A boy, aged 15 months—an eight months child—of good family history, had been markedly pale since birth. The mother's health during her pregnancy was good and she never suffered from anæmia. The child was bottle-fed. He was well nourished but distinctly rickety and exhibited extreme pallor. Hæmic murmurs were present; the spleen was not enlarged. There were 3,213,000 red cells, 10,500 white cells, and 21 per cent. of hæmoglobin. The differential count showed 68 per cent. of lymphocytes, 29·5 per cent. of polynuclears, and 2 per cent. of eosinophiles. There was a considerable degree of poikilocytosis and one or two nucleated red cells were present. He ultimately improved greatly under the continuous administration of iron.

CASE 2.—This patient was a girl, aged 13 months, a twin; the other twin was dead. There were four other healthy children, two of them twins. The state of the mother's health during pregnancy could not be ascertained. The child had been very pale since birth. She was slightly rickety and exhibited loud hæmic bruits but no enlargement of the spleen. The red cells numbered 1,776,000; the white cells 13,000; and the hæmoglobin was 12 per cent. There was considerable poikilocytosis. After persistent treatment for a year the hæmoglobin had only risen to 30 per cent. After this the child was lost sight of.

CASE 3.—A boy, one year old, born at the seventh month. There was one other healthy child in the family. Shortly after birth he was "deeply jaundiced" and on recovering from that was noticed to be very pale and was treated for anæmia by a medical man for several months. He was bottle-fed but had not suffered from diarrhœa or vomiting. Examination showed an extremely pale child with moderate rickets and a spleen which could just be felt. The blood contained 3,700,000 red cells, 3000 white cells, and 34 per cent. of hæmoglobin. He finally recovered under the persistent use of iron and laxatives.

CASE 4.—A girl, aged two years, born at full time. The family history and mother's health were good. For six weeks after birth she was "orange coloured" and had been very pale ever since. She was fed on the breast for a year and afterwards on mixed diet. She had never had diarrhœa. She was an extremely pale child with a slightly yellowish tint. She had slight rickets; the spleen could not be felt. There were loud hæmic murmurs. The red cells numbered 1,920,000, the white cells 10,800, and the hæmoglobin was 28 per cent. A differential count showed 41 per cent. of polynuclears, 56 per cent. of mononuclears (mainly lymphocytes), 1 per cent. of eosinophiles, 1 per cent. of myelocytes, and 1 per cent. of mast cells. There were five normoblasts to every 100 white cells. The child subsequently developed some enlargement of the spleen.

It seems natural in such cases to try to connect the anæmia of the child with defective health on the part of the mother. Such an explanation, however, cannot always or indeed often be advanced. I have not found that the health of the mother during her pregnancy has been specially bad in such cases nor that she has herself suffered from anæmia. One has to remember, too, that the blood-forming functions of the fœtus are quite independent of those of the mother. This is certainly true at all events of the formation of blood cells. A striking illustration of it is found in the case of women suffering from myelogenous leukæmia who yet give birth to perfectly healthy infants. Of such an occurrence many cases are now on record and I have seen at least one well-marked instance of it myself. As regards the chemical constituents of the blood, however, it is by no means certain that such independence exists. Bunge has shown that the child comes into the world with a store of iron in the liver which is derived from the blood of the mother and serves as a supply of that metal throughout the earlier months of life. In some of the cases of congenital anæmia it would seem that this store is insufficient. This seems particularly apt to happen in the case of twins in which there is as it were not enough iron to go round and one twin or both suffers from a deficiency in consequence. In such a case the anæmia takes the form of a deficiency of hæmoglobin rather than of the red cells as a whole.

It is interesting to note that in two of the above cases the mother volunteered the statement that the appearance of the anæmia had been preceded by severe and prolonged jaundice, evidently an exaggerated degree of the ordinary icterus neonatorum. It may be that in such cases there has been an unusual amount of blood destruction, an amount which it has been beyond the power of the blood-forming organs fully to compensate or which has exhausted the available reserve of iron in the liver. When a defective supply of iron to the blood-forming organs is the cause of the anæmia steady improvement follows the administration of iron by the mouth, but in other cases of anæmia dating from birth even the most persistent treatment with iron fails to effect any improvement. In such cases it is possible, though in the absence of more post-mortem evidence one does not wish to be too dogmatic about it, that there is a congenital defect in the red marrow and in consequence an insufficient formation of red cells. Muir[1] has recorded such deficiency of marrow coming on in a boy, aged 14 years, and attended by intense anæmia and there can be no *a priori* reason why it should not occasionally occur as a primary congenital defect. In one fatal case of obstinate anæmia dating from birth I found that red cells and normoblasts were very scantily represented in the marrow which was mainly myeloblastic in type. In this case one could not

[1] A Case of Purpura and Intense Anæmia with Marked Deficiency in the Red Bone Marrow, Brit. Med. Jour., Sept. 29th, 1900.

resist the conclusion that the provision for the manufacture of red cells was defective.

Of an exactly opposite nature to such cases are those in which there is an excess of red corpuscles and of hæmoglobin in the blood, as is seen in *congenital cyanosis*. I do not propose to discuss the supposed reasons for the presence of a surplus of red cells in these cases but would merely point out that examination of them after death has shown an undue degree of activity on the part of the blood-forming organs and a persistence of the fœtal method of intra-capillary blood formation, especially in the thymus.[2]

PRIMARY ANÆMIAS.

1. *Chlorosis.*—If we define chlorosis as most authors seem inclined to do as a condition of anæmia exhibiting a marked relative deficiency of hæmoglobin but occurring only in young women then such a condition can have no place amongst the anæmias of infancy. There can be no doubt, however, that cases are met with in childhood which show at least a markedly chlorotic type of blood along with many of the other signs characteristic of the classical type of the disease. The following are two typical examples.

CASE 1.—A girl, aged one year and seven months. She was a fat rickety child who got little animal food owing to the poverty of the parents. Her complexion was waxy. The spleen was just palpable; hæmic murmurs were present. The blood contained 4,000,000 red cells and only 20 per cent. of hæmoglobin. There was some poikilocytosis and a few normoblasts were present. Under treatment with iron the hæmoglobin rose in a month to 60 per cent.

CASE 2.—A girl, aged three years. She had been fed on the breast till 18 months old. Since then she had been rickety. Her complexion was chlorotic. Her spleen was palpable; hæmic murmurs were present. Red cells numbered 5,000,000, white 13,000, and hæmoglobin 51 per cent. The red cells were regular in size and shape. Under full diet and iron in large doses the hæmoglobin rose in six weeks to 62 per cent. and the child was discharged in good health.

It may be objected that these are simply examples of secondary anæmia associated with rickets. Such an objection I should not care to dispute. What I wish to emphasise, however, is that one does meet in infancy with anæmias characterised by blood of markedly chlorotic type associated with the greenish complexion, hæmic murmurs, and other well-recognised symptoms of the disease as it occurs in young women. Nor need such an occurrence surprise us. The blood of infancy is, as we have seen, normally poor in hæmoglobin compared with that of the adult and the presence of any factor which renders the formation of hæmoglobin still more difficult may readily lead to the appearance of a chlorotic form of anæmia. Such a factor is to be found, I believe, in a deficient supply of iron in the food. Human milk is at best but poor in iron, containing only from 3·5 to 7 milligrammes of the metal per litre (Friedjung[3]) and bad health in the mother may lower this proportion still further. The balance of iron required for purposes of blood formation is made up, as we have seen, from the store of it normally contained in the liver, but if the period of nursing—or of purely milk feeding—is unduly prolonged this reserve becomes exhausted and a deficiency in hæmoglobin results. Cases such as have been described seem specially apt to occur, therefore, amongst children who have been fed at the breast for a protracted period or who after weaning have been supplied with a diet in which animal food is but poorly represented. Such a diet is, of course, just such as is also apt to produce rickets and the correct view to take of such cases is, I believe, that the anæmia is not secondary to the rickets but that both the rickets and the anæmia are the common consequence of unsuitable food. For proof of this one would point to the striking improvements which such patients exhibit when put upon a diet rich in iron and especially when salts of iron are simultaneously given by the mouth.

2. *Pernicious anæmia.*—When we come to consider the question of pernicious anæmia in childhood we are again met by the difficulty of definition. I need not remind you how divided authorities are in this matter, some regarding the absence of any discoverable cause as the criterion of the disease, others basing its diagnosis upon the characters of the blood. These difficulties in the way of recognition of the disease, great as they are in the adult, are greater still in the child. For at this time of life any secondary anæmia may take on a grave form marked by pronounced poverty of red cells, great variability in their size and shape, and the presence of numerous nucleated forms. The relative lymphocytosis, too, which is generally agreed to be a characteristic of the blood in pernicious anæmia is of little assistance in the diagnosis in infancy, during which, as we have seen, such a condition is of normal occurrence. Nor is it easy to recognise pernicious anæmia in infancy from its morbid anatomy, for one of its most striking pathological features—the replacement of the yellow marrow by blood-forming tissue—is found in the normal child. Evidences of increased blood destruction, such as the accumulation of iron in the liver, would be of more value, for, so far as I have seen, it is not found even in the severe secondary anæmias of childhood, but unfortunately this has not always been sought for in the reported cases. Whatever criterion we accept as identifying the disease it is generally admitted to be extremely rare in childhood. Rotch states that out of more than 2000 cases below the age of two admitted to the Infants' Hospital in Boston there was not one of true pernicious anæmia and I have searched the records of the Hospital for Sick Children, Great Ormond-street, for one in vain. In Table I. I have collected from all the available literature cases which have been published as examples of pernicious anæmia occurring in childhood.

It will be observed that they amount to not more than 11 in all, of which only five are at all probably genuine, and of these but one falls within the period of infancy. As in the adult, males appear to be much more frequently affected than females.

The rarity of pernicious anæmia in childhood is a surprising fact. Recollecting the vulnerability of the blood at this time of life and the ease with which injurious influences seem to affect it one would have expected, if pernicious anæmia be really due to the excessive destruction of blood by a poison, as most authorities seem to think, that it is at this time of life above all others that it would be most apt to occur. If, again, we have to deal in this disease with a resumption of the fœtal mode of blood formation with the appearance of megaloblasts in the blood or, at all events, in the marrow, as Ehrlich teaches, surely it is in the child who is but so little removed in time from the fœtal state that such a retrograde metamorphosis would be most prone to manifest itself. Nor are children exempt from those special destructive influences which have sometimes been invoked to explain the disease. Oral sepsis is a frequent and familiar condition in them and is believed by many to be a common cause of secondary anæmia; the parasitic anæmias also which may so closely simulate the genuine disease find striking illustration even in the earliest years of life (see cases of bothriocephalus anæmia published by Schapiro[4] and by Podwissotzky[5]). Whatever the explanation of the comparative immunity of young children to pernicious anæmia may be it is a striking fact in the natural history of the disease which must always be reckoned with in any attempt to account for its etiology.

SECONDARY ANÆMIAS.

The characters of the blood and blood-forming organs in infancy are such as to render the young child peculiarly apt to become anæmic under the action of deleterious influences of various sorts. To this form of anæmia the term secondary or symptomatic anæmia may conveniently be applied. Such deleterious influences may act either upon the blood-forming organs, rendering them less capable of forming blood, or upon the blood itself leading to its increased destruction, or both modes of action may coexist. However produced, secondary anæmia in early childhood is apt to assume a severity rarely met with in adult life and in the most pronounced forms may present a blood picture which in the adult would justify a diagnosis of pernicious anæmia. One can distinguish, however, several grades of symptomatic anæmia. The hæmoglobin seems always to suffer first and in the mildest cases the blood has simply a slightly chlorotic character. This is not surprising when one remembers the fact, already insisted upon, that the infant's blood is normally poor in hæmoglobin and that the marrow seems only capable of forming it in limited amount. When the injurious influences are such as actually to destroy the red cells or seriously to impair the power of the marrow to form them the blood exhibits a poverty of red corpuscles in addition to a low percentage of hæmoglobin. In such

[2] Weil: Note sur les Organes Hématopoiétiques et l'Hématopoïèse dans la Cyanose Congénitale, Société de Biologie, June 29th, 1901.

[3] Archiv für Kinderheilkunde, xxxii., p. 58, 1901. See also Fürst, Therapeutische Monatshefte, 9, 1900.

[4] Wratsch, 1887.

[5] Jahrbuch für Kinderheilkunde, xxix., p. 223. See also abstract of another case (due to tænia) in Podiatrics, April 15th, 1896.

TABLE I.—RECORDED CASES OF PERNICIOUS ANÆMIA IN CHILDHOOD.

No.	Author and reference.	Sex and age.	General clinical characters.	Condition of the blood.	Result.
1*	Kjellberg (Archiv für Kinderheilkunde, v., p. 181; 1884).	M., 5 years.	Marked debility, lemon-yellow tint, hæmic mumurs, retinal hæmorrhages, and all the classical symptoms.	Red cells, 767,000, falling to 571,000; no further description.	Death in 16 weeks. Post-mortem examination was negative.
2	Steffen (Jahrbuch für Kinderheilkunde, xxviii., p. 444; 1888). Gives references to other cases of doubtful authenticity.	F., 16 months.	A rickety child, with general anæmia, but no splenic enlargement.	Red cells one-third of normal, pale but with no alteration of shape; white cells diminished.	Death. Post-mortem examination.
3	Escherich (Wiener Klinische 13 Wochenschrift, and 14; 1892. Contains references to previous alleged cases).	M., 4 years.	Extreme pallor; the spleen was not enlarged; there was some enlargement of the glands in the left side of the neck and left axilla.	Lowest red count 575,000; slight poikilocytosis; megalocytes, but no normoblasts; hæmoglobin from 12 to 15 per cent.; white cells diminished, lymphocytes predominating.	Death. No post-mortem examination.
4*	Mott (Practitioner, August, 1890).	M., 11 years.	Ill eight months; frequent vomiting; lemon-yellow tint; retinal hæmorrhages, &c.	Red cells, 800,000; hæmoglobin, 20 per cent.; marked poikilocytosis; micro- and macro-cytes; few normoblasts.	Death. Post-mortem examination showed typical appearances of pernicious anæmia.
5	Monti and Berggrum (Die Chronische Anämie im Kindersalter, Leipsic, 1892).	M., 6½ months.	A pale, rickety child, with a history of congenital syphilis; the spleen was much enlarged.	Red cells, 868,000; hæmoglobin, 25 per cent.; white cells, 3400; marked poikilocytosis; numerous normoblasts and megaloblasts.	Death. No post-mortem examination.
6	Demme (quoted by Monti and Berggrum, op. cit.).	M., 3 months.	Very anæmic since six weeks old; the spleen was not enlarged.	Red cells, 800,000; hæmoglobin from 28 to 30 per cent.; poikilocytosis; several megaloblasts.	Death. Post-mortem examination.
7	D'Espine and Picot (Revue de Médecine, 1890, p. 859).	F., 2 years.	Pronounced pallor and tendency to hæmorrhages coming on after previous good health; there was no enlargement of the glands or spleen.	Not examined.	Death after a month. No post-mortem examination, but the authors think that leukæmia could be excluded.
8	Ibid.	M., 13 years.	Gastro-intestinal symptoms (vomiting, diarrhœa, and colic) predominated; œdema of the limbs; the liver and spleen were not enlarged; there was frequent epistaxis.	,, ,,	Death. Post-mortem examination was negative.
9*	Theodor (Archiv für Kinderheilkunde xxviii., p. 321, 1901).	M., 11 years.	Ill for one year with all the typical symptoms and appearances.	Red cells very pale; marked poikilocytosis; many megalocytes; 2·4 rising to 9·3 per cent. of normoblasts.	Death.
10*	Rotch and Ladd (Archives of Pediatrics, September, 1901).	F., 9 months.	Great pallor and some general œdema; there was no enlargement of the spleen.	Red cells, 1,088,000; hæmoglobin, 20 per cent.; white cells, 18,800; "microscopical characters typical of pernicious anæmia" (Cabot).	Doubtful.
11*	Goodell (Scottish Medical and Surgical Journal, February, 1902).	M., 11 years.	Anæmia with hæmorrhages from the mucous membranes but none in the fundi; the spleen was not enlarged.	Red cells, 296,000; hæmoglobin, 5 per cent.; white cells, 20,000; four megaloblasts and 25 normoblasts to 1000 white cells.	Death. No post-mortem examination.

* The cases marked with an asterisk are probably genuine.

TABLE II.—CASES OF INFANTILE SCURVY TREATED WITHOUT ALTERATION OF DIET.

No.	Sex and age.	Symptoms.	Diet.	Treatment and result.
1	M., 9 months.	Sponginess of the gums and general tenderness of the bones.	Condensed milk and a tinned food.	Half an ounce of fresh orange juice daily. After a week the tenderness was diminished; the gums were as before; the diet was then changed.
2	F., 6 months.	Sponginess of the gums; thickening and tenderness of the lower end of the left femur and tibia.	Boiled milk, with a tinned farinaceous food.	Half an ounce of sterilised fruit juice daily. After a week all the symptoms were greatly improved; the diet was changed.
3	F., 10 months.	Sponginess of the gums; tenderness of the lower end of the left femur.	Condensed milk and Mellin's food.	Half an ounce of dialysed fruit juice daily. After a week the tenderness was very much less. There was still some sponginess of the gums; the diet was then changed.
4	M., 7 months.	Sponginess of the gums; thickening and tenderness of both femora.	Condensed milk and a tinned farinaceous food.	Half an ounce of dialysed lemon juice daily. After four days the sponginess of the gums had disappeared. The patient was then given 40 grains of citrate of potash daily. Four days later the tenderness of the legs was much less and the mother noticed "great improvement in every respect." The diet was then changed.
5	F., 8 months.	Moderate sponginess of the gums; the legs were tender but there was no thickening.	Condensed milk and a tinned food.	40 grains of calcium citrate daily produced no improvement in a week. After ten days' treatment with malate of potash the tenderness had almost gone and the sponginess was much less. The diet was then changed.
6	M., 8 months.	Sponginess of the gums; thickening and tenderness round the right knee.	Condensed milk and a malted food.	Citrate of potash in small doses produced no change after four days. The diet was then altered.
7	F., 12 months.	Sponginess of the gums and general tenderness.	Boiled milk.	Malate and tartrate of potash (10 grains of each daily). After a week all the symptoms had greatly improved. Raw milk was then given.
8	M., 11 months.	Considerable sponginess of the gums; tenderness but no swelling of the legs.	Condensed milk and nursery biscuits.	Malate of potash, 40 grains daily. As there was no improvement after four days ordinary treatment was begun.

circumstances irregular varieties of red cells (poikilocytosis) and nucleated forms very often make their appearance. It is the pronounced tendency for these abnormalities to develop which indeed specially distinguishes the secondary anæmias of infancy from those of adult life. Acting as it does even in normal conditions close up to the limit of its functional capacity and being unable, for reasons already mentioned, to increase its power of blood formation by a process of hyperplasia, the red marrow of the child when increased demands are made upon it for a greater production of red cells can only meet that demand by a more rapid division of its constituents instead of by extending the area of production over a wider territory. Such rapid production is apt to lead to imperfect formation of corpuscles and to their being turned into the blood stream in a "half-fledged" condition as it were, with their nuclei still present and with a feeble power of resistance. Hence it is that the presence of normoblasts and of poikilocytosis are such striking features in the secondary anæmias of childhood and the younger the child—i.e., the less the power of hyperplasia the marrow possesses—the more readily do such features make their appearance.

In the severest forms of secondary anæmia leucocytosis is apt to develop in addition to diminution of hæmoglobin and red cells. In many cases this is due to the presence of some complicating disease, of which perhaps broncho-pneumonia is in practice the most common. In such a case the leucocytosis assumes the ordinary polynuclear type. In some instances, on the other hand, and these especially in young infants, secondary anæmia is accompanied by an exaggeration of the normal excess of lymphocytes. I think, however, that the frequency with which this occurs has been overstated. Putting aside cases of severe rickets with splenic enlargement, to which we shall return in another lecture, it seems to be chiefly in anæmias associated with chronic gastro-intestinal disturbance that lymphocytosis is most apt to occur. One is tempted to suppose that there is here an over-production on the part of the adenoid tissue scattered throughout the abdominal tract, an exaggeration as it were of the normal digestive leucocytosis. If the lymphocytes in this situation are really normally concerned—as many people believe—in the absorption of food from the intestine it is not straining the imagination too far to suppose that any condition which renders difficult the process of absorption may be compensated by an over-production of these cells. Their increased numbers may enable as much as possible to be saved from the wreckage of food which is being swept on too fast into the lower bowel. The excess of lymphocytes in the blood in such a case would exactly correspond to the excess of red corpuscles met with in cases of cyanosis. In both instances over-production of the cell concerned is nature's way of overcoming obstacles in the way of its fulfilling its normal functions. But this, of course, is pure speculation.

It would be impossible to deal in any detail with the numerous injurious influences which may lead to the development of symptomatic anæmia, nor indeed would anything be gained by attempting to do so, but one or two typical illustrations may be selected. Of influences which probably act chiefly on the blood-forming organs malnutrition is one of the commonest and best marked. The most striking examples of the action of this influence which have come under my observation have been in the case of children who have been fed too long at the breast or who have been kept on a purely milk diet far beyond the time at which mixed feeding should be adopted. The following is a pronounced example of such a case.

A boy, aged two years and three months, a twin, born at the full time, had been feeble since birth. He had always been bottle-fed and when he came under observation was getting two quarts of milk a day without any other food. He exhibited extreme pallor without any sign of rickets and no enlargement of the spleen. There was a loud systolic murmur over the præcordia, the blood was very watery and contained 1,692,000 red cells, 4000 leucocytes, and 17½ per cent. of hæmoglobin. There were 63 normoblasts per cubic millimetre but no poikilocytosis. Under treatment with ordinary mixed diet and full doses of iron the number of red cells rapidly rose to 3,500,000 and the hæmoglobin to 45 per cent.

The special defects of the diet which are doubtless responsible for the production of the anæmia in these cases are: (1) poverty in iron; and (2) deficiency in proteid. The raw material for the production both of hæmoglobin and of red cells being thus lacking poverty of blood results. As both these defects are specially marked in a purely milk diet it is not to be wondered at that children who have been fed on such a diet too long should exhibit secondary anæmia in a striking form. To this point I have already referred in the discussion of chlorosis. There can be no doubt, too, that a similar cause is a potent factor in the production of milder degrees of anæmia in later childhood. Here is an illustration.

A girl, aged five years, had always been a pale child, but owing to the death of her mother had for some time been badly cared for and insufficiently fed. She was very chlorotic looking, had a just palpable spleen, and also loud hæmic murmurs. The blood contained 2,400,000 red cells, 15,000 white cells, and 40 per cent. of hæmoglobin. There was marked poikilocytosis but there were no nucleated red cells and of the white cells polynuclears predominated. She was put on a diet rich in animal constituents and full doses of iron and left hospital entirely cured.

I have selected here a pronounced example but such cases in a minor degree are met with every day. They are the peculiar product of poverty which necessitates the consumption of a diet which is not so much deficient in quantity as defective in quality, lacking especially those more expensive animal constituents which can alone insure a sufficient supply of proteid which is so essential in the building up of blood as of all tissues. Slight anæmia from this cause is a potent factor in the chronic ill health so often seen in the children of the working classes, particularly in large towns where the blood-forming functions are still further depressed by the absence of sunlight and fresh air. Nor should such slight degrees of anæmia be neglected, for although they may be, and usually are, fully recovered from later when a more generous diet is obtainable yet their effects may be irreparable. For it must not be forgotten that it is not a matter of indifference when the tissues and organs during the susceptible years of growth have been bathed with a poor and watery fluid instead of with rich and fruitful blood. Impairment of growth and development, shrinking of body and backwardness of mind, cannot fail to be the consequences and those to whom the present state of the national physique is a source of anxiety would do well, I believe, to look to this as a potent source of possible deterioration.

Of influences which lead to secondary anæmia by causing an increased destruction of blood the best examples are to be found amongst the acute infective diseases. The vulnerability of the blood in childhood so often referred to renders it peculiarly liable to suffer from the influence of the toxins of such diseases. Though almost all the acute specific fevers show their influence upon the blood in children by a fall in hæmoglobin which sets in just after the temperature has fallen and is only restored during later convalescence,[6] yet the destructive power of some toxins appears to be much greater than that of others. The rheumatic poison seems to be peculiarly potent in this respect. Children rarely fail to exhibit a marked degree of anæmia after an attack of acute rheumatism especially, I think, when accompanied by peri- or endo-carditis. Every fresh outbreak of the disease during convalescence is apt to signalise itself by a deterioration of the blood. This rheumatic form of anæmia which must be familiar to every clinical observer has been specially studied by Dr. A. E. Garrod who has shown that the fall in the red corpuscles in these cases is usually very rapid and may easily amount to 1,000,000 in the course of four or five days. It is interesting, too, to note that sudden and marked falls in the hæmoglobin may occur independently of those in the red cells. The destruction of blood in these cases bears no necessary relation to the height of the fever nor is it influenced by the administration of salicylates. The destruction of red cells is usually speedily made good after the temperature has fallen, but in some cases the diminution of hæmoglobin persists far into convalescence and long after the patient's condition has improved in every other respect. Diphtheria is another of the acute infectious diseases which is apt to be attended by severe blood destruction. It is also characterised by a tendency for myelocytes to appear in the blood—a sign always of bad prognostic omen. The influence of the toxins of the pyogenic organisms is seen in the anæmia associated with oral sepsis in childhood to which Hollopeter[7] has specially drawn attention and in the pronounced anæmia which results from long-standing suppuration. Of mixed causes of secondary anæmia in childhood the syphilitic cachexia, tuberculosis, and chronic diarrhœa may be taken as examples. These probably act both by increasing blood destruction and by interfering with its formation. In these and in all secondary anæmias there is no

[6] Widowitz: Jahresbericht für Kinderheilkunde, Band xxvii., p. 380, 1888.

[7] Medical News, August 13th, 1902.

characteristic type of blood and the extent and degree of destruction are of more value in gauging the intensity of the disease and in forming a prognosis than in making a diagnosis.

INFANTILE SCURVY.

The condition of the blood in cases of infantile scurvy raises questions of great interest and importance. The general pathological anatomy of this disease has been so fully worked out by those distinguished Fellows of this College, Dr. W. B. Cheadle and Sir Thomas Barlow, that there remains nothing of importance to be added from that side. It will be admitted, however, that we are still very much in the dark as to the actual change in the blood which is present in this disease. Now, in the first place it may be remarked that the microscope affords us no help here. An examination of the blood in cases of scurvy shows that it exhibits merely a varying degree of that secondary anæmia of rather chlorotic type which is so frequent in rickets and other conditions of impaired nutrition. Nor does histological examination of the marrow which I have been able to carry out in two cases reveal any characteristic changes. We are driven, then, to study the question from the chemical point of view. It will be obvious that this is an investigation attended by great difficulties. One cannot obtain a sufficient quantity of blood to subject it to accurate chemical analysis and accordingly one is compelled to study the subject indirectly. In the course of the last few years I have tried, at the suggestion of Dr. Garrod and as opportunity offered, to arrive, by a process of therapeutic experiment, at an idea of what the chemical fault in the blood of these cases is. My progress towards a solution of the problem has been slow, for cases of infantile scurvy are not numerous and not all of them are suitable subjects for such observations as I am about to describe, but it may be worth while to put before you the results so far as I have gone in the hope that they may lead to more extended observations on the same lines by others.

It will be generally conceded in the first place that infantile scurvy is the result of a faulty diet. The first question that arises then is this: Is the fault a positive or a negative one? That is to say, is there present in the food some constituent which it should *not* contain, or is there absent from it or present in insufficient amount one of its normal ingredients? To this question the general study of the etiology of the disease has not afforded any satisfactory reply. It has shown only that the vast majority of cases develop when the child is being fed upon a diet which is deficient in fresh constituents, particularly in fresh milk. As to how it is that such a diet produces the disease no explanation is forthcoming. It has been referred by some to the presence of poisonous constituents (ptomaines) in tinned foods, a view which as regards adult scurvy, at all events, is believed to have received support from the experiments of Vaughan Harley on monkeys. Others have referred the injurious effect of sterilised food to the absence in them of some mysterious ferment. The first step, then, must be to see whether, leaving the diet under which the disease developed alone, one can, by the mere addition of certain constituents to it, effect a removal of the symptoms. Fruit juice is the material which one naturally thinks of adding and in order to elimininate the ferment theory I have given it in a sterilised form. In Case 2 of Table II. this was added to the diet, no other change being made, and the result showed that it had a distinctly curative influence.

The inference to be drawn from this observation and from that on Case 1 is that the fault in the diet of scurvy is one of omission and not of commission, in that fruit juice contains something which the blood in this disease lacks and that this ingredient is of an "unorganised" nature. The next step was to administer the constituents of fruit juice separately and so to arrive by a process of exclusion at the particular ingredient concerned. By means of dialysis the crystallisable were separated from the uncrystallisable constituents of the juice and the dialysate was evaporated down until it was equal in bulk to the original quantity of juice. Preliminary observations on cases not included in the accompanying table showed that the uncrystallisable or colloid constituents were devoid of any curative effect. The dialysate was then tried (Cases 3 and 4) and proved to have a distinct power of ameliorating the disease. The assumption seemed justified therefore that the curative agent is contained amongst the crystalline constituents. The final proof of this would be found if one could show that the administration of an artificial mixture of the vegetable salts found in fruit juice is also followed by cure. Here, however, the results are not so satisfactory. I have tried the effects of administering potassium tartrate, potassium citrate, and potassium malate (the chief saline constituents of fruit juice) in considerable doses but have not been able to obtain anything like such good results as with the natural juice (see Cases 5, 6, 7, and 8). That these salts, however, have, even in their artificial form, a power of restraining the disease I think there can be no doubt, and my friend Dr. John Thomson tells me that he has seen a case in which scurvy was kept in check so long as citrate of potassium was being administered for other reasons.[a] It may be that these salts are less active in their artificial form than in that in which they occur in the natural juice, just as it is well known that a natural mineral water is often more active than any artificial imitation of it. At all events, I think the conclusion is provisionally justified that the defect in the blood which causes the symptoms of scurvy is a poverty in vegetable salts, a conclusion which I need not point out is in no way a novel one, though it has never, so far as I know, been put to any systematic test.

A priori reasoning would lead to the conclusion that the citrates are the vegetable salts chiefly concerned. It must never be forgotten that fresh milk is surprisingly rich in citric acid. It has been calculated, indeed, that three pints of it contain from 50 to 60 grains of citrate, or about as much as is contained in an ounce of lime juice. In milk the citric acid is combined with calcium as citrate of lime. Corlette, in an interesting paper read before the British Medical Association in 1900, has shown that the calcium citrate of milk occurs in the amorphous and more soluble form, its solution being aided by the presence of phosphates. When milk is boiled the amorphous is converted into the crystallisable form of the salt which is less soluble and separates out. The mere boiling, and *a fortiori* the sterilisation, of milk therefore causes it to become poorer in citrates than it ought to be, and to this he attributes the development of scurvy when such milk is exclusively used. Ingenious and simple though this explanation is, it cannot yet be regarded as proved. I have certainly found that the artificial administration of calcium citrate is of even less therapeutic power in scurvy than are the artificial salts of potash (Case 5). In any case it must be admitted that the hypothesis of a deficiency of vegetable salts in the blood does not bring us much nearer an understanding of how it is that the hæmorrhages and other characteristic symptoms of the disease are brought about. Certainly it is not in a reduced coagulability of the blood that the explanation is to be found. Whatever may be the case regarding the coagulability of the blood in scurvy of adults it is apparently not in any way lessened in the infantile form of the disease. I have tested this point in five well-marked cases, using Wright's coagulometer, with the following results:—

Age.	Coagulation time.
Eight months	3½ minutes.
Eleven ,,	4½ ,,
?	4½ ,,
One year	5¼ ,,
One ,,	4 ,,

This gives an average coagulation time of about four and one-third minutes which closely corresponds with the normal. One effect, however, which one would certainly expect to ensue upon a diminution of vegetable salts of potash in the blood is a reduction in its alkalinity. Whether such diminished alkalinity is actually present in infantile scurvy I have not myself been able to test, but Dr. A. E. Wright informs me that he has investigated the point in several cases with the aid of his ingenious apparatus for testing the reaction of the blood and has found that a diminished

[a] Dr. Thomson writes that the case alluded to was that called "Baby B." in his paper on Acute Pyelitis in Infants (Scottish Medical and Surgical Journal, July, 1902). She had been brought up mainly on sterilised milk and cream mixture, but to this two meals of gruel and one of Nestlé's food had been added for a short time. She had apparently thriven well enough till nine and a half months old when she got mucous diarrhœa and some pain on movement of the left leg. When first seen a fortnight later her symptoms were those of acute pyelitis but her gums were also red and swollen. There were no other scorbutic manifestations. Sterilised milk was continued and citrate of potash was administered for the pyelitis which soon disappeared. A few days after it was stopped, however, distinct scorbutic symptoms appeared—viz., marked sponginess of the gums and large bruises on both shins. Under the usual dietetic treatment she recovered rapidly.

alkalinity actually exists. Such an occurrence would not be at all at variance with the results of general clinical observation on the etiology of the disease. Everyone must have seen cases of scurvy in which the mere stoppage of the use of a tinned food without anything being substituted for it or other change made in the diet has been followed by the happiest results. Now the cereal foods, as Wright has shown,[9] certainly yield a more acid ash than milk and what happens probably in such cases is that there is a disturbance of the proper balance of acid and alkaline constituents in the blood, a balance which is readjusted when the supply of the more acid salts is withdrawn. Wright has established this in the case of adult scurvy by an examination of the blood of soldiers who suffered in the siege of Ladysmith[10] and has, as already stated, found a similar condition of the blood in cases of infantile scurvy. It seems likely, therefore, that it is upon such lines as those indicated above that the explanation of the ultimate cause of the disease must be sought.

The Oliver-Sharpey Lectures

ON

RECENT STUDIES ON THE TISSUE-LYMPH CIRCULATION.

Delivered before the Royal College of Physicians of London on April 12th and 14th, 1904,

BY GEORGE OLIVER, M.D., F.R.C.P. LOND.

LECTURE II.[1]

Delivered on April 14th.

MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND GENTLEMEN,—The last lecture was almost entirely devoted to the study of the effects of digestion on the tissue-lymph circulation. We have now to consider the influence of exercise, fatigue, rest, sleep, respiration of gases, internal secretion, temperature, and gravitation.

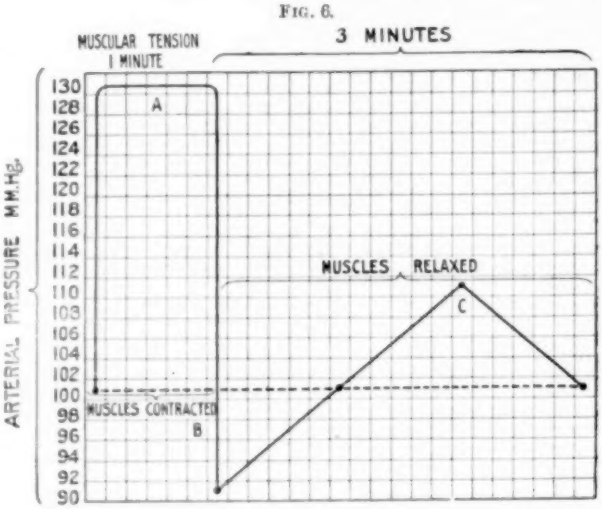
THE EFFECTS OF EXERCISE.

The effects of muscular action have been studied, first, during its continuance; secondly, immediately on its cessation; and thirdly, for some time after the termination of the exercise. Each of these three sets of observations has yielded distinctive facts which, when observed collectively, have invariably followed the same order. It is therefore obvious that observation made during any one of these stages only must furnish an incomplete picture of all the effects of exercise. Most observers, because of the difficulty of recording the blood pressure accurately while exercise is in progress, have made their observations only when muscular action ceases. The fundamental effects of exercise on the blood pressure may be readily studied in an epitomised form by placing the pad of the hæmodynamometer over a small superficial artery, like the superficialis volæ and then throwing all the muscles into a state of tension for 60 seconds (the arm on which the observation is made being excluded from the contraction). In Fig. 6 you observe that the complete blood pressure curve of muscular contraction is made up of two elevations (A) and (C), separated by a fall (B), which is just as decidedly below the normal pressure as the second rise is above it. The first elevation (A) is synchronous with the tension, the second (C) appears after the muscles are relaxed. Now these oscillations of the arterial pressure are all seen on a larger scale in ordinary exercise, each stage being, of course, prolonged in proportion to the duration of the exercise. The primary rise is invariably followed by a gradual fall, even during the continuance of the exercise, and by a rapid and decisive fall on its cessation; and that fall is succeeded during rest by a second rise. Sir Lauder Brunton and Dr. J. W. Tunnicliffe, some of whose experiments were made in Professor Mosse's laboratory, are, I believe, the only observers who have furnished trustworthy data on the arterial pressure in man both during muscular movement and immediately after its cessation, and their data accord with my own.[2] The secondary rise of blood pressure which I have invariably found to supervene during rest after exercise does not, however, seem to have been recognised by other observers unless we conclude that Marey recorded it when he found that the pressure in the carotid artery of the horse after falling six millimetres of mercury immediately following a run of ten minutes subsequently rose seven millimetres of mercury above its original height.

Exercise increases the exudation of tissue lymph. This fact is indicated by the differential readings of the blood taken either during a sustained muscular contraction or immediately after exercise. Inasmuch as lymph is rapidly removed, being absorbed on the cessation of exercise, the observation should be made without delay, for in from five to 15 minutes after walking or other forms of exercise the samples of blood taken before and after compression will generally read alike, showing that the lymph has disappeared.

How are these effects of exercise produced? According to Ludwig and Gaskell[3] during a short tetanus (such as a sustained contraction of 60 seconds) the flow from the efferent vein of the muscle after the first spurt of blood may fall to practically *nil*. It would seem that muscular contraction causes partial or temporary occlusion of the intramuscular arteries and arterioles and that this increase of peripheral resistance, along with reflex cardiac stimulation, will go far to explain the rise in the arterial pressure. At the same time the capillary pressure within the muscle will fall and lymph will not be exuded. But the state of the circulation is different in the non-muscular parts, for all the blood pressures (arterial, venous, and capillary) are markedly raised during the sustained tension of the muscles. Hence the effusion of lymph in the finger. On the other hand, when the contraction ceases the intramuscular capillary pressure at once rises and lymph will be effused into the muscles in the intervals between successive contractions. That the muscles when relaxed after contraction become full of blood is shown by the work of Ludwig and his pupils, by Chauveau and Kaufmann, and also by Sir Lauder Brunton

FIG. 6.



The effect of muscular tension on the arterial pressure. A, Rise from muscular tension. B, Fall on relaxing the muscles. C, Secondary rise during rest.

[9] Army Medical Reports, 1895.
[10] THE LANCET, August 25th, 1900, p. 565.
[1] Lecture I. was published in THE LANCET of April 30th, 1904, p. 1175.

[2] Remarks on the Effect of Resistance Exercises upon the Circulation in Man, Local and General, by Sir Lauder Brunton and Dr. J. W. Tunnicliffe, Brit. Med. Jour., Oct. 16th, 1897.
[3] Ludwig's "Arbeiter," 1877.

and Dr. Tunnicliffe, who have furnished graphic evidence of the dilatation of the intramuscular arteries which follows muscular contraction.[4]

In the first lecture I demonstrated by the effect of muscular tension on the arterial pressure that when the lymph is being effused the contractibility of the muscles diminishes progressively after food. Now the same thing happens after exercise. The degrees of contractibility vary inversely to the amount of lymph effused. Exercise likewise provides some instructive facts as to how tissue fluid is removed. Observation shows that a short muscular contraction of 60 seconds will produce two effusions, one during the contraction, which is entirely absorbed in 60 seconds, and another immediately afterwards, which disappears just as quickly, so that in four minutes we have two successive effusions which entirely clear up. The rapidity with which lymph disappears from the tissues in a state of rest favours the notion of absorption rather than that of transmission along the lymphatics. Now, experimentation on animals shows that muscular action of some kind is necessary to insure a flow of lymph along the lymphatics; so we may conclude that during exercise itself the muscular action will more particularly favour that passage for the lymph. If we admit the probability of these two routes being adopted—namely, the short circuit by absorption and the longer circuit by the lymphatics—we may gain some notion of the share which each takes in the removal of lymph from the tissues by resting one arm in a sling during exercise and immediately afterwards ascertaining the amount of lymph on the passive and on the active side. This I have repeatedly done, with the result that the finger on the passive side contains from 30 to 50 per cent. more lymph than that on the active side. Therefore, it is clear that the lymphatic route is largely adopted during exercise. It has been observed that the vaso-motor effects of exercise are hastened and increased by warmth and are delayed and diminished by cold. The effect of exercise on the digestive effusion of lymph is in the direction of increase inasmuch as during exercise a high level of lymph exudation is maintained.

Time fails me to touch on the practical bearing of the foregoing data on the importance of regularly maintaining the flushing effect of the fluid transfers between the blood and the tissue spaces, but I regret this the less as I cannot improve on the wise teaching of Sir Hermann Weber who so graphically and forcibly brought before us this aspect of the subject last December.[5]

FATIGUE.

Observation has shown that the rise in the arterial pressure produced during the continuance of exercise becomes less and less pronounced in proportion to the duration of the exercise; for example, the initial increase of from 15 to 20 millimetres of mercury gradually subsides until, after the lapse of a certain time (which varies with the tone of the individual and with the external temperature), the arterial pressure will not exceed 100 millimetres of mercury, and if the exercise is further continued, it will even fall lower, to 95, 90, or 85 millimetres of mercury. This point was also observed by Sir Lauder Brunton and Dr. Tunnicliffe who found that during a continuous series of leg movements (slow flexing of the legs on the thighs and the thighs on the trunk with shot-weighted ankles) extending over 30 minutes the arterial pressure rose during the first half of the time but fell to normal, or even below normal, during the second half.[6]

Why should the rise of pressure, normally induced by exercise, be effaced, or even be replaced by a fall, when exercised is prolonged? Inasmuch as the lymph exuded during exercise obstructs the contractile pressure of the muscular fibres on the intramuscular arteries and arterioles, the peripheral resistance caused by exercise will be reduced and the arterial pressure will gradually fall. In fatigue no amount of will exerted over the muscles can raise the arterial pressure at all; the muscles, though capable of ordinary contraction, become, as it were, lymph-logged. But massage quickly disperses the lymph and the contractibility is restored. Human instinct, without knowing the "why," practised what is now taught by physiological inquiry. We read in the Odyssey how the women rubbed and kneaded their weary heroes and thus invigorated them and we know that from time immemorial rubbing was the sovereign remedy for fatigue. Whilst doubting if massage can re-invigorate muscular fibres we admit that it can remove the lymph which obstructs their contraction and may thus produce a feeling of relief and restoration.

The physiology of fatigue includes another important factor—namely, diminished gravity control over the blood pressure. The outcome of exercise is the production of hypotonia in the vaso-motor mechanism, which is the central fact, as it were, of fatigue. You know, of course, that this condition implies the downward drain of blood through the toneless splanchnic arterioles into the capacious abdominal veins and the diminution of the blood-supply to the systemic and locomotive organs and to the brain. The splanchnic stasis is easily demonstrated in man. If a weight (e.g., a bag of shot, 14 pounds) is placed on the abdomen of a healthy subject, with normal arterial tone, that pressure will remain unaltered. Should, however, the arterial tone and pressure be reduced, the shot bag will raise it. This downward drain will doubtless raise the capillary pressure in the splanchnic area and thus increase the lymph flow from the abdominal organs; in a word, in fatigue the fluid transfer will become more splanchnic than systemic.

REST.

I have mentioned that during rest after exercise there is developed a steady and persistent rise of all the blood pressures (arterial, capillary, and venous) and a corresponding effusion of tissue lymph. Observation has shown that the volume and duration of this secondary outflow of lymph are always proportionate to the vaso-dilator or reducing effect of exercise and it is produced like the digestive exudation by cardiac stimulation. When it has subsided and the blood pressure has again become normal the tension test shows that the muscles have gained in contractility. Therefore the physiological intent of this lymph flow is to repair and to recharge the muscular fibres. How does nature thus automatically restore without the ingestion of food? In the first lecture I adduced some evidence to show that during digestion the important office of distributing pabulum to the tissues is relegated by nature to certain small quantities of waste products which, though themselves devoid of food value, accompany the food elements and by causing a reaction in the circulatory mechanism raise the capillary blood pressure and thus induce an exudation of lymph. Now we generate such materials in ourselves just as animals and plants create them for our benefit. Whenever we contract our muscles we initiate a series of chemical changes which produce such residua and the amount of these autogenous waste products will be proportionate to the duration and intensity of muscular action. There are two substances which produce, according to my observation, the characteristic double curve of arterial pressure induced by exercise and rest: these are creatin and ammonium lactate. It has been suspected that these substances form stages in the passage of proteid towards urea in muscle metabolism[7] and the physiological evidence I have obtained seems to me to support this view.

SLEEP.

According to my observations a large volume of lymph (not less than 20 per cent.) is exuded into the somatic tissues during sleep. The presence of this effusion is not only shown by the differential readings of the blood but is suggested by the tension test, for on first waking muscular tension, though strong, will not raise the arterial pressure more than a few millimetres if at all, whereas in five minutes or so it may elevate the pressure 40 or 50 millimetres. In sleep the arterial pressure falls very low (from 78 to 82 millimetres of mercury) and the venous pressure rises to a high point (from 40 to 50 millimetres of mercury) to a little over a half of the arterial pressure, whereas in the waking state it is only as a rule one-fifth of that pressure. The swollen state of the veins in sleep was recorded by Andreas Cæsalpinus over 300 years ago[8] and must have been the subject of observation even before that date (1593). In sleep there is complete vaso-motor relaxation, consequently the veins not only of the somatic but of the splanchnic area are filled with blood. The splanchnic stasis is shown by the fact that when the shot bag (14 pounds) is applied to the abdomen the arterial pressure is raised at once from 80 to 100 millimetres of mercury.

[4] Op. cit.
[5] A lecture on Means for the Prolongation of Life, by Sir Hermann Weber, Brit. Med. Jour., vol. ii., 1903.
[6] Op. cit.
[7] Schäfer's Text-book of Physiology, vol. i., pp. 904-5.
[8] Questiones Medicæ, 1593.

In a few minutes, however, when the subject is fully awake the arterial pressure rises to 95 millimetres of mercury or so, the venous pressure falls to 15 or 20 millimetres of mercury, the shot bag no longer raises the arterial pressure, and the effused lymph of sleep, having become absorbed, is no longer apparent. Mosso[9] demonstrated by his plethysmograph that during sleep the volume of the extremities increases and he naturally inferred that this fact was due to an accession of blood, though I think it may in part be ascribed also to the large exudation of lymph which irrigates the tissues during sleep.

What is nature's intent in thus supplying the tissues so liberally with lymph during our sleeping hours? The answer admits of no doubt—restoration—and how true to fact is the old proverb "He who sleeps dines." For during sleep nature provides the maximum amount of tissue lymph which we only obtain intermittently after meals. This fact suggests why sleep tends to plethora and obesity. Can the restorative power of sleep be demonstrated? The tension test furnishes the answer. I have for some time kept a night and morning record of the reading of muscle contractility, no tissue lymph being then apparent from the readings of the blood before and after compression, and I will here epitomise the results. In the morning before breakfast and after a good night the effect of muscular tension on the arterial pressure is nearly always greater than it is in the evening. This morning rise depends on the amount of exertion undergone during the previous day; when the day is spent quietly the rise may not exceed 10 or 15 millimetres of mercury but when much walking or cycling is done it may amount to 20 or even over 30 millimetres of mercury. The quality of the sleep is important, for if it be broken or much disturbed by dreams the morning rise is lessened. When in the morning I am in the best condition the tension rise will amount to 50 millimetres of mercury (half the normal pressure), when I am a little below par it will not exceed 35 or 40, and when slack it will not rise about 30 millimetres of mercury. This new application of the hæmodynamometer undoubtedly affords correct readings of the tone of the muscles. It suggests that the muscles are like accumulators, in that they are charged by every effusion of tissue lymph and are discharged by contraction and that certain physiological products, such as glycogen and adrenalin, are specially valuable in restoring contractility.

How does mere rest differ from sleep? During rest the vaso-motor mechanism is not relaxed as in sleep and lymph is then only exuded under the influence of lymph-pressor agents, whether exogenous (as during digestion) or endogenous (as after exercise). If there exist chemical causes for these lymph exudations may we not suspect that some product may be generated for the effusion during sleep? Retraction of the neurons is now the favoured theory of sleep, but if there be a chemical cause (perhaps, however, not probable) may it not be some substance which, relaxing the vaso-motor mechanism, raises the peripheral blood pressure and thus perfuses a large portion of the plasma into the tissues? Even after a meal the vaso-relaxant effect of sleep predominates and the blood pressure curves are vaso-dilatation, but on awaking they quickly resume the ordinary digestive form.

RESPIRATION OF GASES.

I have found that various gases and volatile bodies produce a marked effect on the blood pressure and lymph circulation. I have experimented with oxygen, carbonic acid, sulphurous acid, sulphuretted hydrogen, and a large number of volatile emanations. As I am at present prosecuting this part of the inquiry with Dr. Samuel Rideal, and as our results will appear later, I will confine my remarks to a general statement of the effects of oxygen, carbonic acid, sulphurous acid, sulphuretted hydrogen, and the atmosphere of sewers.

Oxygen.—When oxygen is inhaled for three minutes from Martindale's oxygenator the arterial pressure rises, for example, at once to 120 millimetres of mercury, and after ceasing to inhale the gas it remains at that height for fully five minutes, when it falls at the rate of one millimetre per minute, reaching 100 millimetres of mercury in 20 minutes, 80 millimetres of mercury in 40 minutes, and returning to normal in 20 minutes more. Two exudations of lymph of 20 per cent. each take place corresponding with two elevations of the venous pressure which indicate simultaneous augmentations of the capillary pressure. Oxygen differs from all other gases experimented with, in that its effects continue for some time after it has been inhaled (suggesting the initiation of chemical changes in the organism), whereas the effects of other gases cease at once. Besides this, the oxygen blood-pressure curves differ from those produced by any other product with which I have so far experimented.

Carbonic acid.—Having observed that the arterial pressure rises in a room with closed windows and doors in which a lamp or gas has been kept burning for some time, and will at once fall on opening a window or the door, I was led to make a number of observations with the blood pressure gauge. This work has shown that the instrument affords a ready and practical test of the ventilation of rooms, workshops, places of public resort, railway carriages, &c. For example, while sitting in one of the "Tube" stations the other day I found my arterial pressure 125 millimetres of mercury, whereas before entering and on leaving the station it was 100 millimetres of mercury. Such an observation is easily made and the results obtained are definite. The observer selects a time when his arterial pressure registers 100 millimetres of mercury. He then enters the room or place to be tested; if the ventilation is bad the pressure at once rises 10, 15, 20, or even 30 millimetres of mercury, and if a window be opened or the observer retires from the room the pressure falls at once to the normal figure. There is a quantitative relation between the amount of carbonic acid and the increased pressure recorded. Carbonic acid shuts off tissue lymph like adrenalin (*vide seq.*).

Sulphurous acid, on the other hand, lowers the arterial pressure and when present in the atmosphere along with an excess of carbonic acid it checks or annuls the pressure rise of the latter.

Sulphuretted hydrogen.—When some of the Harrogate Old Sulphur Well water is poured into a basin and the emanations are inhaled the arterial pressure falls (e.g., in three minutes) from 100 to 90 millimetres of mercury and the venous pressure rises from 20 to 35 or 40 millimetres of mercury. This physiological effect is maintained so long as the sulphide gas is given off (an hour or more), and I am disposed to think that the element sulphur is the cause of it, for when this is taken at bedtime (as the compound sulphur tabloid of Sir Alfred Baring Garrod) the arterial pressure is lowered during the following day. Moreover, when half a pint of Harrogate water is swallowed the arterial pressure also falls, but when the sulphide is dissipated (the saline constituents only being left) the water raises that pressure (e.g., in 20 minutes) from 100 to 110 millimetres of mercury. I therefore conclude that the association of the sulphide with the salines is important in regard to the treatment of gouty states by the Harrogate sulphur waters.

The atmosphere of sewers affords some instructive facts in regard to the effect of gases on the blood pressure and the lymph circulation. I have made some preliminary observations on this subject. 12 men employed in the London sewers were selected—fine, healthy-looking fellows, as such men usually are. A shed about 15 yards from the entrance to the sewers was used, at noon, when the blood pressure is normal, for making the observations. Seven of the men had not been in the sewers that morning and their arterial pressure was 100 millimetres of mercury in every case. They were ordered merely to walk quietly about the sewers without working and after stated intervals to return, one at a time, every five minutes. The arterial pressure was found to have increased in every case, that of the first man (15 minutes in sewer) being 108, the second man (20 minutes) 110 and all the others 115 millimetres of mercury. Three men had been working in the sewers all the morning and in their cases the pressure was also 115. Two, without previous observation of the pressure, had been walking about in the sewers for half an hour and in them the pressure was also 115. All the men were ordered to walk about for 30 minutes in the open air after coming out of the sewers and in every case the arterial pressure was then found to be normal (100 millimetres of mercury). The whole of this evidence was consistent in showing that something in the atmosphere of the sewers caused the arterial pressure to rise. That rise was obviously not due to work, for the three workers had no higher pressure than the others, nor was it due to the heated atmosphere of the sewers, for heat lowers the arterial pressure. I do not think it was caused by carbonic acid, for the effect of this gas passes off almost instantaneously on leaving an ill-ventilated atmosphere. Whether the rise be due to marsh gas (methane)

[9] Ueber den Kreislauf des Blutes im Menschlichen Gehirn. Leipsic, 1881.

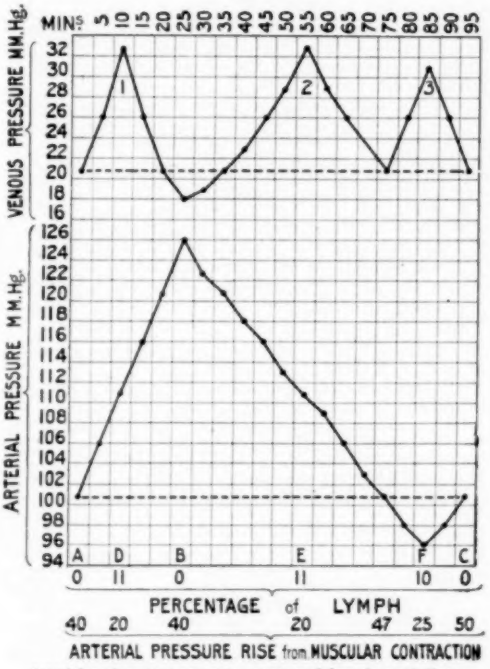
or to some other gas can only be settled by an analysis of the sewer atmosphere.

In making these observations I gleaned a point of medical interest. Though these men who spend eight hours a day in the sewers are strong and healthy, they nevertheless, I am told, become in comparatively early life rheumatic or quasi gouty. The atmosphere of the sewers is apparently a stimulant of the circulation, for it raises the blood pressure, increases the pulse-rate very considerably, and flushes the skin; so that these men who spend a third part of their day in it have their tissues continuously charged with a large quantity of tissue lymph which signifies an excessive supply of pabulum for the maintenance of a high level of nutrition, the unknown emanation in the sewer atmosphere acting as their lymph factor. Hence, probably, the ultimate development of a chronic gouty disposition, just as with others, alcohol or an excess of meat may lead to the same goal. So even from the sewers we may gather a lesson in the pathogeny of gout.

INTERNAL SECRETION.

A doubt has been expressed as to whether the physiological effects of thyroid, suprarenal, and other extracts derived from ductless glands—effects established by experiments on animals—are demonstrable in man. That is a view which seems to me to be only accounted for by an unrecognised defect of technique, for ten years ago my first observations on the effects of suprarenal and thyroid were made on man and the results obtained prompted me to a conjoint inquiry with Professor Schäfer which satisfactorily established them. Besides this, in the course of the present inquiry I have confirmed in man all the leading results which have been obtained by experimentation on animals with thyroid, suprarenal, pituitary, and testicular extracts. I purpose to do further work in this department and as time presses I will just now merely illustrate the effects of adrenalin and thyroid extract on the blood pressure and the lymph circulation. Fig. 7 shows the pressure curves and lymph exudation from

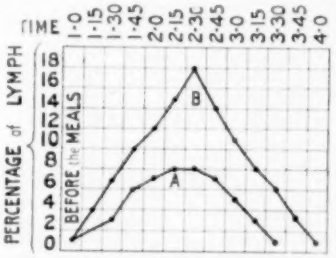
FIG. 7.



Arterial and venous pressure curves and lymph exudation from hemisin tabloids, Burroughs, Wellcome, and Co. (= 0·00045 gramme adrenalin).

a dose of adrenalin (one and a half tabloids hemisin = 0·00045 gramme adrenalin) and illustrates some of the leading conclusions of this inquiry. The powerful cardiac stimulant effect of adrenalin is indicated by the cardiometric rise of from 20 to 30 millimetres of mercury. As the arterial pressure rises and falls the cardiac excitation expresses itself in two elevations of the venous pressure (1 and 2) which indicate temporary rises in the capillary pressure producing modified exudations of lymph. These effusions, however, are soon absorbed by the rapid fall in capillary pressure (as shown by that of the venous pressure) produced by arteriolar contraction; and at the acme of the effect no lymph is found. An additional fact comes out in man. The rise in arterial pressure is followed invariably by a temporary fall, during which the capillary and venous pressures rise (3) and fresh lymph is exuded which is absorbed as the pressures become normal. The tension test confirms the absence of lymph at A B C and the limited effusions at D E F and shows a large net gain in contractility. You observe that the venous pressure throughout is (relatively to the arterial) reduced. By raising the dose the areas of lowered venous pressure and of the negative reading of lymph increase, and by reducing it

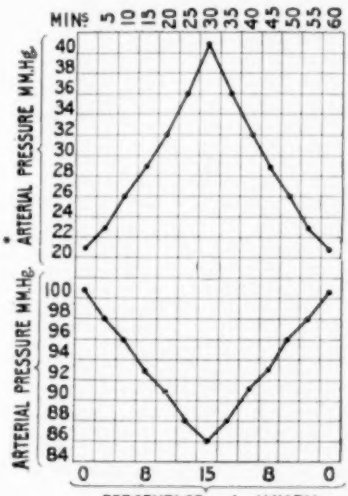
FIG. 8.



Lymph curve. A, After ordinary meal with a thyroid tabloid (five grains). B, After ordinary meal only.

the constricting action on the arterioles is subordinated to the cardio-stimulant effect and the capillary and venous pressures do not fall. May not nature adopt the latter course, using this wonderful molecule of adrenalin very sparingly? Should we not take the hint and prescribe it only in such small doses as half a hemisin tabloid (= $\frac{1}{10}$th part of a grain) in the tumbler of water with meals when we wish to secure its restorative effects as a lymph factor? This fact disposes me to think that adrenalin fundamentally

FIG. 9.

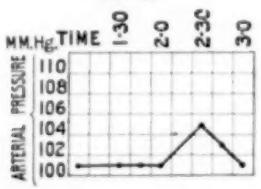


Effects of thyroid tabloid (five grains) on blood pressure and tissue-lymph exudation.

* The word "arterial" is a misprint on the illustrative block for "venous."

stimulates the heart muscle more than the peripheral muscular fibres. Fig. 8 shows the effect of a tabloid of thyroid extract, five grains (Burroughs, Wellcome, and Co.), taken with an ordinary mixed meal. B is the lymph exudation produced by the meal without the tabloid and A with it. This limiting effect on the digestive lymph flow suggests why thyroid extract is often useful in reducing weight in obesity. In Fig. 9 are recorded the arterial and venous pressure curves produced by thyroid extract. The cardiometric use of the pulse gauge shows that it is a cardiac depressant. Adrenal and thyroid extracts, taken together, neutralise each other's effects. In the example given in Fig. 10 the vaso-contraction

FIG. 10.



Purin and salt-free meal, with hemisin (= 0·0045 adrenalin) and thyroid tabloid (five grains).

of the adrenalin towards the end of the observation just overbalances the vaso-relaxant effect of the thyroid.

TEMPERATURE.

Warmth reduces vaso-motor and cardiac tone; it lowers the arterial pressure and the capillary and venous pressures rise. Its effects resemble those of sleep and thyroid. Cold increases vaso-motor and cardiac tone; it raises the arterial pressure and the capillary and venous pressures fall relatively to the arterial and then absolutely. It therefore acts on the lines of adrenalin. The amount of lymph is proportionate to the rise of capillary pressure.

GRAVITATION.

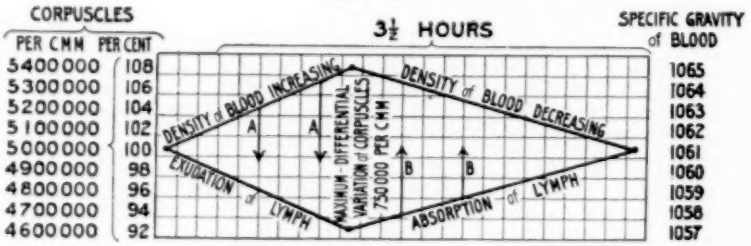
Is the lymph circulation, like the blood pressure, affected by gravity? If it were a certain amount of œdema would be normal and we know that this is not so. Although the toe does not lend itself to compression so satisfactorily as the finger I have succeeded in making several reliable observations which show that samples of blood derived from the toe before and after compression yield exactly the same differences as those furnished by the finger, proving thus that there is no such thing as physiological œdema.[10] How is this? It is obvious that we must take into consideration some other factor in lymph production besides the blood pressure. Professor E. H. Starling of University College has shown that that factor is the difference of permeability in the capillary wall. He has demonstrated that the permeability of the capillaries of the liver and intestines is much greater than that of the limbs, and of the former the hepatic capillaries are more permeable than the intestinal. In like manner my observations suggest that there is a difference between the permeability of different districts of the systemic capillary area, so that the effect of the blood pressure on the lymph flow is made uniform by differences in the permeability of the capillary wall.

IS TISSUE LYMPH A SECRETION OR AN EXUDATION?

Many physiologists believe that lymph is a secretion product and I should like to refer you to a *résumé* in favour of that view in the recently issued excellent translation of the work of Poirier, Cimèo, and Delamere on the lymphatics by Mr. Cecil Leaf. On the other hand, the old pressure theory of Ludwig still survives and no one has done more valuable work in support of it than Professor Starling whose results,[11] with those of Baylis,[12] Lazarus-Barlow,[12] Leathe,[12] and Tubby,[12] should be thoroughly studied by every one who aspires to a sound view on this question. All my observations support the conclusion that tissue lymph is a filtrate or pressure product. But I can fancy someone asking, "Is not the digestive lymph effusion, concurring as it does with the flow of gastric juice, an evidence of the secretion theory?" I will therefore try to answer this question.

Pawlow has shown most clearly in his experiments on sham feeding in œsophagotomised dogs that the secretory activity of the gastric glands mainly and primarily depends on the psychical influence of appetite, and that contact between the food and the stomach wall only indirectly brings that activity into play by awakening or increasing a desire for food. Now, all my observations on the digestive lymph differences clearly show that the rôle of the psychical element is subordinated to that of the ingestion of food, for I have never found that an appetite, with food in sight, is of itself sufficient to cause the slightest flow of lymph. Moreover, my observations clearly indicate that the only substances which excite that flow are those food elements and foodstuffs containing them which raise the capillary blood pressure, whether these materials be pleasant to the palate or otherwise. Furthermore, many investigators have injected strong meat extracts per rectum into animals without detecting the least sign of gastric gland activity,[13] whereas I have found that rectal injections in man of beef extracts and of other physiological products which raise the blood pressure cause the same flow of tissue lymph as when the extractives are swallowed. From this fact we may conclude that the chemical excitants of the gastric glands act, as Pawlow believes, on the peripheral afferent nerve endings in the stomach and thus reflexly stimulate the glands; and that, on the other hand, the active principles which produce the lymph flow must first be absorbed into the blood so as to raise the blood pressure before they can create that flow. I think that this position is of practical interest in showing how rectal feeding may nourish the body by inducing a flow of tissue lymph, even though gastric digestion be for the time in complete abeyance. We may therefore conclude that though these two events (the gastric secretion and the lymph

FIG. 11.



Schema showing A A, Exudation of lymph conveying proteids and salts to the tissues; and B B, Absorption of tissue fluid containing soluble waste and salts.

effusion) are associated when digestion is going on they are nevertheless distinct processes, one being a secretion primarily under psychical control, though amenable to special stimuli acting on the gastric nerve centres; and the other an outflow into the inter-stitial spaces induced, not only by digestion, but by exercise, sleep, or any of the physiological products submitted to observation in this inquiry.

IS THERE AN INTERMEDIARY CIRCULATION?

The rapid removal of lymph from the tissues when the muscles are at rest, for example, after exercise and on awaking from sleep, suggests absorption rather than transmission by the lymphatics. Therefore, I think, there is evidence in support of a circulation of fluid independent of the lymphatic circulation, though controlled by the capillary circulation, of which it may be said to be an extension.

There is not time to discuss the forces involved. The best account of them as at present known is that given by

[10] At one time I thought that physiological œdema was not improbable. See Croonian Lectures, 1896.

[11] Text-book of Physiology, by Professor Schafer, F.R.S., &c., vol. i.
[12] Journal of Physiology (Cambridge and London), vols. xvi. and xix.
[13] Pawlow: Op. cit., p. 108.

Professor Starling.[14] Ludwig pointed out that the prime factors in the effusion of lymph are filtration and diffusion. My observations refer only to filtration and they suggest such a schema of the intermediary circulation as is represented in Fig. 11, which shows the mechanism, as it were, for the supply of pabulum to the tissues (A A) and for the removal of soluble waste from them (B B). The view there represented explains why the ingestion of food restores the tissues at once and long before the food itself can be assimilated into the blood. The exhausted tissues have not, therefore, to remain unsupplied until the food becomes part of the common store of pabulum which the blood keeps ready for distribution. Each supply of food may be viewed as a deposit paid to our banking account; but it is not merely a deposit, for nature combines with it a cheque for payment; the banker, therefore, is compelled to reimburse at the same time that he receives, so that the balance is kept fairly uniform. But nowadays in our strenuous preoccupation we too often rely solely on the seductive cheque, forgetting the necessary deposit, and so living on the blood itself the balance dwindles.

In normal subjects each effusion of tissue lymph is intermittent, rising out of, and subsiding into, an apparently lymph-free state of the tissues when the capillary blood pressure (as indicated by the venous pressure) touches its minimum point. Probably at such times some trace of tissue fluid is actually present but insufficient to be made apparent by the ordinary use of the differential test. Extended observation has demonstrated that this intermittent discharge and absorption of tissue lymph become remittent in a large number of cases in which the capillary blood pressure is persistently raised; when, in fact, the intermediary circulation is thrown out of gear.

SOME PRACTICAL DEDUCTIONS.

I am fain to hope that this inquiry enables us to recognise some order in the normal reactions of the blood pressure and lymph circulation to the leading physiological conditions, and that it provides us with a somewhat clearer notion when the normal blood pressure can be relied on as a good base line remaining uniform for experimental and comparative clinical determination. Extended observation has shown that at such times the blood pressure is much more uniform than is usually supposed, and that disregarding physiological variation greatly impairs the precision and accuracy of the clinical determination of it. In the ordinary course of work, where observation cannot be made at the most reliable time (within an hour before a meal), I have found the following rule useful as a correction to the disturbing effect of digestion on the arterial pressure: to deduct from a pressure observed in the first hour 15 millimetres of mercury, in the second hour ten millimetres of mercury, and in the third hour five millimetres of mercury.

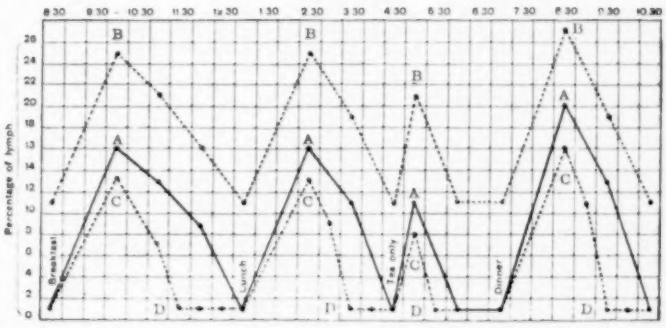
Clinical work has shown that we meet with two great departures from the normal condition of the circulation—one in which there is a hypotonic and the other a hypertonic state of the vaso-motor mechanism. The former is characterised by splanchnic stasis, which, in the active postures of the body, diminishes the systemic blood pressure and the flow of tissue lymph dependent on it. You know, of course, that as physicians we speak of the blood pressure as synonymous with the arterial pressure, for this pressure is the most important from the clinical standpoint; but the capillary is the working physiological blood pressure, for the arteries and the veins are but conduits for the passage of the blood to and from the seat of the metabolic traffic—the capillaries. Now this functioning pressure in the systemic districts of the body is lowered (relatively to the arterial pressure or absolutely) in all hypotonic states and the obvious indication is to raise it, as by the ingestion of those foodstuffs richly endowed with lymph factors and to guard against further splanchnic vaso-dilatation by limiting exercise and prolonging the intervals of rest.

[14] Schäfer's Text-book of Physiology, vol. i.

The hypertonic state of the circulation is found in many acute and chronic ailments. When persistent it includes several important groups of diseases, some (such as chronic Bright's disease, arterio-sclerosis, &c.) the outcome of organic changes in the vessels and others the product of toxæmia. The last section embraces the majority of cases belonging to that large class of ailments which we call gout, a term regarded by some as a convenient label for a sort of rubbish-heap of nondescript ailments. Having, however, devoted many years to the study of the circulatory facts presented by gouty subjects (some hypotonic but the majority hypertonic), I am satisfied that we have in these facts faithful indications of the operation of a common cause which links these cases together; chronic goutiness has, therefore, grown more and more real to me as inquiry proceeded. There is not time to discuss the causation of gout, but I should like to ask you to imagine what would happen to the normal alternations of the circulation of blood and lymph which I have described were the digestive exudations made to overlap by an excess of the exogenous lymph factors. Would not the blood pressure gradually rise until at last the intermittent subsidences to normal before each meal ceased to recur; and would not consequently the absorption of tissue fluid be checked and the tissues become continuously charged with it? This is, indeed, the position which has been demonstrated by ample clinical observation (Fig 12, B). In the hypotonic states (e.g., neurasthemia, phthisis, &c.) the effusions of tissue lymph are diminished (Fig. 12, C). Hence the value of forced feeding, and especially meat feeding, which charges the tissues highly with lymph, as in goutiness. Many clinicians (Dr. J. E. Pollock, Sir Dyce Duckworth, Sir Hermann Weber, and Dr. F. Parkes Weber[15]) believe that gout is antagonistic to phthisis. For long I have held that view.

This inquiry, I think, affords a few suggestions on the dietary of gout, with the view of controlling and limiting the excess of exogenous lymph factors. This excess, we must remember, will be determined by the eliminative power of the individual and by the activity of his endogenous production of lymph factors. Dr. I. Walker Hall[16] has published estimations of the purins contained in the various meats which he has analysed and I calculate from his data the following averages: for white meats or fish (rabbit, veal, chicken, turkey, cod, plaice, and halibut), 0·1012; for mutton, 0·1025; and for beef, 0·1502. So it seems that we are wise in preferring mutton to beef, but I doubt if we gain much by selecting roast white meats only. Boiling the meat and excluding the broth are far more effectual in limiting the digestive lymph wave than taking roast white meats, and in this way even beef may be made less harmful for the gouty than roast chicken or fried white fish. Patients will often say, "I have faithfully carried out my doctor's orders. I have lived on white meats, never touching beef or mutton, and here I am as gouty as ever. Is

FIG. 12.



Typical digestive waves of tissue lymph. A, Blood pressure normal. B, Blood pressure super-normal. C, Blood pressure sub-normal. D, Zero points of lymph.

[15] Remarks on the Relations of Pulmonary Tuberculosis to other Diseases, by F. Parkes Weber, M.D., F.R.C.P., THE LANCET, April 2nd, 1904, p. 924.

[16] The Purin Bodies of Foodstuffs and the Rôle of Uric Acid in Health and Disease, by I. Walker Hall, M.D., pp. 39-49.

it not clear that diet does not control gout?" One then goes into particulars and soon finds an explanation of the enigma. It is discovered that the proportion of the foodstuffs more highly charged with purin bodies, as compared with those containing smaller quantities of these bodies, has not only not been reduced but has actually been increased, this result having been attained by withdrawing the carbohydrate food-stuffs, such as potatoes, rice, tapioca, fruits, and sugar, which (except perhaps sweet fruits containing lævulose) have yet to be proved to be injurious in the gouty state. Dr. Walker Hall shows[17] that the following are free from purins: eggs, white bread, rice, tapioca, and green vegetables (cabbage, lettuce, cauliflower), and that potatoes, butter, and cheese are practically free. These are all valuable constituents of the somewhat limited dietary of gout, and I have moreover proved that they cause no reaction in the circulation. On the other hand, gravies and the meat extracts (so frequently used in cooking) produce large exudations and should be prohibited or should be greatly limited.

My experience shows that an excess of sodium chloride makes all forms of dietary in gout futile. I have often been struck with the great liking for salt which gouty subjects develop, especially when over 60 years of age, and as often have I been gratified by the favourable results obtained by prohibiting unboiled salt meats and limiting the supply of salt, or combining it with potassium chloride, or substituting potassium chloride for it. I have found that all alcoholic beverages (except gin) increase the amplitude and duration of the digestive lymph waves—brandy, wines, and malt liquors being the most active of these lymph-pressor agents. This greater activity is apparently due to alcohol and its congeners and not so much to the purins—for wines are free from these bodies, and lager beer, pale ale, and porter do not contain very much of them.[18] Whisky is much less lymph pressor, and gin when taken with food actually reduces the lymph exudation (e.g., from 20 per cent. to 12 per cent.) and should therefore prove useful in most forms of hypertonia.[19] The methyl purins of tea, coffee, and cocoa, so valuable in health, probably play their part in increasing the continuous charge of tissue lymph in gout; but I think they are much less active than alcohol and its congeners in spirits, wines, and malt liquors.

According to my experience, when in a case of gout the diet has been properly adjusted the normal intermissions in the tissue lymph circulation are restored; there is then no longer need for further restrictions and it is rarely necessary to make the dietary irksome—if only the rules imposed are faithfully observed.

NEW REMEDIES SUGGESTED BY THIS INQUIRY.

This inquiry has suggested the use of some of the organic products I have experimented with as remedies. Though I have only so employed them in a tentative way the results encourage me to prescribe them and perhaps others may also like to do so. They are all prepared as tabloids by Messrs. Burroughs, Wellcome, and Co. Two are vaso-dilators—ammonium hippurate and lichenin; the last body is a polysaccharide obtained from Iceland moss and certain algæ, and must be a sugar of a remarkable chemical constitution. After the immediate effects of a dose (two grains) of the hippurate, lasting about an hour, have passed away, the vaso-motor mechanism is impressed by it for fully 24 hours; in normal subjects the arterial pressure during that time falling five millimetres with a corresponding rise in the venous pressure. Witte's peptone is the only other agent I know which produces a similar lasting effect on the circulation. So far I have prescribed the hippurate only once a day, and the results in reducing the arterial pressure and in improving the general health and well-being have been excellent.

The other products, glycogen and lævulose, exert a contrary effect. Glycogen is made up in one-grain tabloids. At present it is somewhat expensive but its physiological effect is so decided as a vaso-tonic and renovator of muscular contractility that I anticipate it will prove a useful restorative in hypotonic conditions (neurasthenia, phthisis, &c.). The saccharide lævulose is also promising in the same direction. Hugo Weber[20] last year published some striking curative results in the treatment of phthisis in which lævulose produced a very pronounced gain in weight. It is made up in ten-grain tabloids, of which two or three can be taken with food.

I have also made observations (physiological and clinical) on the effect of Witte's peptone. Knowing the work that has been done showing the backward conversion of peptone by the alimentary mucosa I did not expect to find any alteration of the blood pressure from the ingestion of this product. Though observation contradicts this anticipation I do not, however, think that the results are due to peptone at all, for they are not produced by commercial peptone. I suspect that they arise from the presence of amido acids, for I find that leucine and tyrosine, and especially leucine, are much more active vaso-dilators than Witte's peptone. Moreover, these ultimate products of proteid cleavage would not be intercepted or transformed by the gastric mucosa.

The physiological action of peptones and proteoses on the vaso-motor system and the urine has been well worked out by Professor W. H. Thompson.[21] Witte's peptone contains very active constituents and the tabloids which I have used are in grades of one-quarter, one half, and one grain. No disturbing effects of any kind have been observed to follow the one grain dose, but as the effect on the vaso-motor mechanism seems rather to increase than to diminish with the continuance of the remedy smaller doses suffice to maintain it. Hitherto I have prescribed it only once a day and when the arterial pressure tends to fall to 100 millimetres of mercury I have given it every other day or substituted a smaller dose of it or of ammonium hippurate for continuance. In one case the arterial pressure which was 148 millimetres of mercury (and had been for some years from 140 to 150 millimetres of mercury) gradually subsided under the daily dose and at the end of a week it was normal, and remained normal with the same dose three times a week. The improvement in the patient's general health was marked. I have obtained similar results with half a grain and even quarter of a grain doses in cases in which the rise of the arterial pressure was somewhat less than this. I am hoping that we may find in this substance or in ammonium hippurate or in the amido acids a long-felt clinical want supplied—namely, a remedy possessing a vaso-dilator action less fleeting than that of the nitrites which are so valuable for emergencies.

Want of time prevents me from bringing before you several other branches of this subject, such as the effects of tobacco smoking, of the important physiological products choline and neurin, and of various drugs on the tissue-lymph circulation. Moreover, I have been unable to touch on the obvious bearing of this study on our knowledge of œdema simple and inflammatory. There is much more work to be done, but meanwhile let me briefly summarise a few provisional conclusions.

1. Tissue lymph is intermittently effused, for example, after the ingestion of food, during exercise, rest after exercise, and during sleep.

2. The rapid effusion and removal of it in states of rest suggest the probability of a circulation between the blood and the tissue spaces—a circulation independent of the lymphatic circulation.

3. The apparent physiological intent of the effusion is reparative and that of its absorption is the removal of tissue waste.

4. The normal intermittency of the fluid exchange becomes in many pathological conditions less and less complete.

5. By studying the conditions which increase or decrease lymph effusion we ought to gain a clearer insight how to control derangements of nutrition and metabolism.

CORRIGENDA.—In Lecture I., p. 1176, first column, ninth line from top, read "between two pressures higher than the normal capillary pressure." P. 1177, second column, twenty-sixth line from top, read "very often go together."

[17] Op. cit.

[18] Dr. Walker Hall: op. cit.

[19] Since this lecture was delivered I have ascertained that gin owes this exceptional property to the juniper it contains.

[20] Zeitschrift für Tuberculose und Heilstättenwesen, Band iv., No. 6.

[21] Journal of Physiology, Cambridge and London, 1896, 1899, and 1900.

CROWNHILL CONVALESCENT HOME.—The annual meeting of the subscribers to the Crownhill Convalescent Home, near Plymouth, was held on April 29th under the presidency of Mr. W. Bastard. The report stated that 268 patients had been admitted during 1903. The financial statement showed that there was an adverse balance of £29. The home has now been established 20 years. Sir Massey Lopes has recently given £500 towards the endowment of the institution.

ABNORMAL MUSCULAR CONTRACTIONS.[1]

BY E. NOBLE SMITH, F.R.C.S. EDIN.,
SENIOR SURGEON TO THE CITY ORTHOPAEDIC HOSPITAL, LONDON.

I DO not propose to trouble you with a dissertation on the whole pathology of abnormal muscular contractions but I would introduce my subject by referring to the various heads under which these contractions may be ranged. We may divide the whole subject into two classes of causes: (1) causes originating in the nervous system: and (2) causes originating in the muscles themselves. In the first class we may make the following divisions:—A. Conditions inducing active spasms of muscles. These may be congenital or acquired. Of the acquired class we have: (*a*) permanent spasm resulting from disease of the brain (as in the "late rigidity" of hemiplegia); (*b*) permanent spasm arising from disease of the spinal cord (as in spastic paraplegia or as in lateral sclerosis, or temporarily and of a spurious character, as in Pott's disease); (*c*) permanent spasm due to lesions of the trunks of nerves (as sometimes occurs after facial paralysis); (*d*) hysterical spasm (spastic club-foot may occur); (*e*) tetanic contraction; (*f*) permanent spasm arising from reflex causes; and (*g*) permanent tonic spasm arising from causes of nervous origin but not included in the above (as in spasmodic torticollis). B. Conditions leading to passive contraction of muscles without spasm. These also may be congenital or acquired. To the former it is supposed by some that ordinary club-foot belongs, although it is quite possible that these congenital cases may have commenced as spasmodic nerve contractions. Of the latter we have (*a*) those cases due to unbalanced action of groups of muscles where the antagonistic groups are paralysed (as in infantile paralysis); and (*b*) those due to the maintenance of a paralysed limb in a shortened position for a considerable time by spasm (this is the most frequent condition in acquired club-foot). I will now deal briefly with the several examples which I have referred to in the foregoing outline of causes.

Pott's disease.—It will probably suffice if I quote the remarks which I have made upon this subject on p. 28 of my small work "Paralytic Deformities of the Lower Extremities": "Spastic contraction of the flexors of the lower extremities in patients affected with caries of the spine denotes an extension of inflammatory mischief, pressure upon the spinal cord and consequent myelitis. However severe the contraction may be, tenotomy is inappropriate so long as spasm, denoting an active condition of caries, remains. Pressure on the cord from an abscess may sometimes necessitate the performance of laminectomy, but as a rule the spasmodic contractions resulting will subside under efficient fixation and general treatment. When, however, the active caries has been subdued and consolidation of the bones has taken place, then, if permanent contracture remains, it will be necessary to perform tenotomy, particularly of the tendines Achillis."

Hysterical spasm.—It would be difficult to define the nature of hysterical spasm. When one part of the body, such as a foot, is held constantly and rigidly in one controlled position I doubt very much if hysteria will altogether account for the distortion. One of the most markedly hysterical young women I ever saw was sent to me with severe talipes equinus for operation. I recognised this as a hysterical case and declined to operate. I treated her by the Weir-Mitchell system, the foot receiving particular attention from the masseuse. At the end of six weeks the patient was greatly improved as regarded her general condition and the spasm of the foot had relaxed, but there was then revealed a permanent shortening of the calf muscles causing a certain degree of contraction of the foot, but nothing like the amount which had formerly existed. I then divided the tendo Achillis and restored the part to a normal condition and there was no more trouble with the foot. In hysteria we more often find an exaggeration of symptoms, perhaps a gross exaggeration, than a mere simulation. In other words, there is generally some reality underlying the neurotic element.

Spasmodic torticollis.—This affection is characterised by almost constant spasmodic action of the sterno-mastoid of one side only. In a few cases the muscles on both sides are affected. When these spasms have continued for many months or years the posterior cervical muscles, especially the splenius capitis, also become involved in the morbid action. This happens on the other side to that of the acting sterno-mastoid. There are other varieties which I have described in my pamphlet upon this subject.[2] In that publication I showed that treatment by drugs had always failed to cure the affection and I therefore advocated operation. Campbell de Morgan of Middlesex Hospital in 1866 divided the spinal accessory nerve and cured a severe case, but no other surgeon so far as I know had since then repeated the operation until I resuscitated this treatment. In 1880 I wrote a letter[3] recommending this procedure. On April 22nd, 1890, having previously stretched the nerve, I operated on my first case. I first published a statement of this case in April, 1891.[4] In this case I subsequently (May 28th, 1890) excised pieces from the external branches of the posterior divisions of the second, third, and fourth cervical nerves and cured the patient. At this time there was no record of operation upon the posterior cervical nerves having been carried out and if my paper had been published when it was received it would have been the first published case. The pressure on the space of the journal in consequence of Koch's discoveries regarding his treatment of tuberculosis delayed the publication of my paper for six months and just before it appeared Keen of America reported a similar operation performed by himself. I have operated 16 times and in every case a satisfactory result has taken place. In several instances (and it may be in all) the nerve has reunited after a certain period from six months onwards and the function of the sterno-mastoid has been restored without any return of the spasm. Not only have the spasms been removed by these operations but there has been no permanent weakness produced by the paralysis of one sterno-mastoid and no deformity has resulted from the loss of action of this one muscle, although the contrary has been stated upon theoretical grounds as being sure to result. There can be no doubt that the other numerous muscles of the neck keep the head straight.

Congenital and acquired club-foot.—It will doubtless serve the purpose of this paper if we discuss the treatment of congenital talipes varus or equino-varus only, this form of club-foot being the most common and characteristic of all. The treatment of club-foot in the past—I mean subsequently to the introduction of tenotomy and before the time of osteotomy—consisted in continued pressure by means of splints and surgical boots and the division of resistant tendons and fasciæ. This procedure was very slow and tedious to both patient and surgeon. One very important detail of the method was to defer operation on the tendo Achillis until the varus part of the deformity (the turning in of the front part of the foot) had been thoroughly overcome and this procedure continued to be of the greatest importance. The fixation of the heel in a contracted position caused by shortening of the calf muscles gives the surgeon great leverage power in his endeavours to draw the forepart of the foot into a straight position. When this varus deformity had been entirely overcome the equinus which remained was easily removed by division of the tendo Achillis and careful after-adjustment to insure a correct lengthening of the tendon. The treatment as thus briefly sketched occupied nearly the whole period of growth, for although the more active interference took from three to six or eight months the patient had to be under occasional observation for several or many years and would probably during that period have to wear some kind of retentive apparatus.

Osteotomy.—Upon the introduction of osteotomy it was thought that a solution of the difficulties and the removal of the tediousness of the previous treatment of club-foot had been discovered. The removal of a wedge of bone or the ablation of separate bones from the tarsus and the immediate placing of the foot in a comparatively straight position, it was thought, would effect an immediate cure. It was said to be a cutting of the Gordian knot and such it really seems to be, for although the deformity is apparently removed the structure is severely damaged. Osteotomy, in fact, is a mutilation of the foot and the joints become more or less ankylosed and useless. The patient may be able to place his foot or what remains of it flat upon the ground, but he loses that exquisite elasticity with which nature has endowed this

[1] A paper read before the Chelsea Clinical Society on Feb. 16th, 1904.

[2] Spasmodic Wry-Neck, &c. London: Smith, Elder, and Co., 1891.
[3] Brit. Med. Jour., March 4th, 1880.
[4] Ibid., April 4th, 1891.

human member. I have seen a great number of cases exhibited at various societies as examples of the success of osteotomy but I have always considered them examples of the failure of that operation. The patients have moved about with what we may call stumps instead of natural feet.

Another operation advocated for this deformity is subcutaneous division of all the soft tissues on the inner side of the sole down to the bones (Buchanan's operation). Regarding this procedure I may quote the late Mr. W. J. Walsham, whose opinion I think was always sound and unbiased. He adopted this procedure in a few cases and he states: "At the time of the operation the shape of the foot was certainly much improved and no apparent harm followed the division of the nerve and artery. We were disappointed, however, with the result, and in one case had subsequently to remove the astragalus." Then, again, we have subcutaneous division of all the soft tissues in the sole of the foot and behind the internal malleolus. I again quote Mr. Walsham who wrote: "This operation does not commend itself to us. The severance of the whole of the arteries, nerves, muscles, fasciæ, and ligaments in the sole of the foot, as well as the whole of the soft parts behind the inner ankle, together with the tendo Achillis and posterior ligament of the ankle, appears to us a very severe and, we are tempted to say, not a very scientific procedure." With the opinion thus expressed by Mr. Walsham I entirely agree.

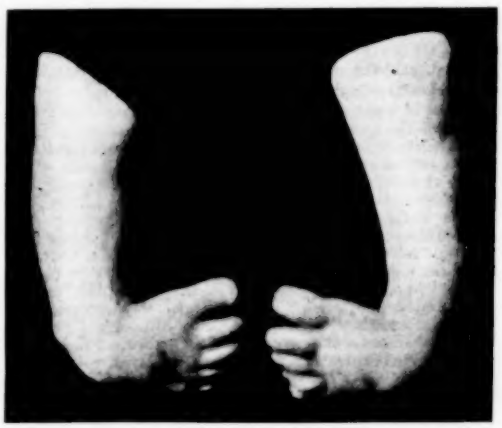
Another operation which has received much attention is the open incision of all the soft tissues on the inner side of the foot down to the bone (Phelps's operation). The late Dr. A. M. Phelps of New York devised and brought this operation before the medical profession in 1881, since which time it has been largely adopted by general surgeons in this country. At the annual meeting of the British Medical Association at Ipswich in 1900 Dr. Phelps was present and advocated his method of operating. At that meeting I, as well as other surgeons connected with our London orthopædic hospitals, expressed an opinion adverse to Dr. Phelps's operation for the following reasons. That any improvement that may be effected in the position of the foot at the time of operation will have a tendency to relapse as the parts heal and contract. Just as in the case of severe burns accompanied by great loss of tissue the gap made will recontract unless a plastic operation is performed to fill up the parts which are wanting, so in Phelps's operation the contracted part being divided and separated must close together again. In a contraction from a burn if we cut through the cicatrix and separate the parts, however much we may try to keep them asunder the healing process will reproduce the deformity.

Professor A. Ogston of Aberdeen has devised a much better procedure than osteotomy or the other severe cutting operations which I have referred to. In the case of children in whom the tarsal bones are chiefly cartilaginous this surgeon cuts into the bones separately and scoops out each osseous centre until sufficient is taken away to enable the deformity to be entirely corrected by manipulation. The joints are left intact.

Rapid reduction by moulding.—I will now describe the plan of dealing with club-foot which I think is superior in every way to all other procedures yet described. I must first state that the treatment by manipulation, which I mentioned as being so successful, and the subsequent use of apparatus to keep up the good position until the bones have grown to their natural shape, occupies a considerable length of time—for instance, the case that I exhibited at Ipswich and of which I now give illustrations (Case 1, Figs. 1 and 2) occupied three years in producing the effect shown in Fig. 2. This even did not suffice and it was considered desirable that the boy should continue using a very simple light instrument for several years longer. This treatment is tedious but not so troublesome as may be thought. The principal part is accomplished in the first six months and after that the patient is only seen perhaps at intervals of three or four months. After the age of three years the patient referred to was only seen by me about once a year, until at the age of 15 years the feet were absolutely normal in every respect. In comparing this procedure with Phelps's operation and also with osteotomy we find that even with these heroic methods mechanical support has to be kept up almost if not quite as long as I have indicated even to produce a partial improvement. Now the procedure which I am about to describe is a modification of the treatment by manipulations and immediate reduction after tenotomy which I had practised for a number of years. The modification which I now employ was introduced to my notice by Professor Lorenz of Vienna. As a result of this modification the varus part of the deformity may, in many cases, be overcome at one sitting. Others may take two or more operations at intervals of a few weeks. In every case the foot is put up in a plaster-of-Paris casing, with due precautions against undue pressure, and kept up for some months.

The reduction of club-foot by forcible manipulations is, as I have said, a very old procedure but there is a vast difference in the details of carrying it out. As regards Lorenz's

FIG. 1.



Case 1. Cast taken shortly after birth, December, 1884.

method I have during the past year obtained far better results by this plan than I ever did before. Some surgeons advocate the use of mechanical wrenches and possibly for those operators who do not possess much muscular strength such a method may be necessary, but I am inclined to think that these manipulations are done better with the hands alone. By the latter means we retain

FIG. 2.

Case 1. Cast taken at the age of 15½ years.

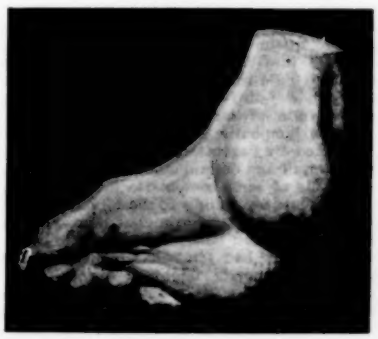
more thoroughly the sense of touch, a feeling of give and take which is deficient in using the mechanical wrench. It is not absolute violence which leads to success; it is the steady, persevering, unremitting pressure, constantly varied

from one point of bearing to another, which produces the best results. Feet which during the first five or ten minutes' working seem hardly to give way at all gradually succumb to the continuous though varied pressure. In former days I used to persevere for perhaps five or ten minutes in trying to correct a foot and then placed it in the best position which could be maintained in plaster-of-Paris bandages. Now I persist for half an hour, three-quarters of an hour, or even longer. Gradually the parts become lax and softened and one is able to manipulate the foot into any shape one likes. It is, of course, tremendously hard work, and the more careful one is to avoid damage, such as deep bruising, the harder the work is.

FIG. 3.

Case 3, aged 12 years. Cast of left foot, posterior view taken before operation, February, 1903.

FIG. 4.



Case 3, aged 12 years. Cast of right foot, posterior view, taken before operation, February, 1903.

FIG 5.

Case 3 aged 12 years. Cast of right foot, anterior view, taken before operation, February, 1903.

CASE 2.—On March 13th, 1903, I tried Lorenz's treatment in a woman, aged 40 years, suffering from congenital talipes varus, and who walked on the sides of her feet. She had been treated from childhood by several surgeons. At the first operation a great deal of the deformity was overcome but having worked as hard as I could for an hour I did not feel equal to do any more, besides I doubt if it would have been judicious to continue the "sitting." The foot was maintained in its improved position by plaster-of-Paris bandages. At the second operation on May 20th, nearly ten weeks after the first, I succeeded in overcoming entirely the varus position. Again the feet were secured in plaster-of-Paris bandages. There remained, however, some contraction of the calf muscles and contraction of the toes. Therefore on Oct. 6th last I divided the tendo Achillis of both feet and the extensors of all the toes. This was nearly seven months after the first operation. On Dec. 28th, 1903, she was able to walk a mile comfortably and was improving daily. She can now walk barefooted with her feet flat on the ground, but she will naturally have to wear light supports for a time.

CASE 3.—A male patient, aged 12 years, was admitted to the City Orthopædic Hospital in February, 1903. His feet appeared as shown in Figs. 3, 4, and 5. The first operation was performed on Feb. 20th, 1903, the second on March 31st, the third on June 3rd, the fourth on July 21st, the fifth on Oct. 7th, the sixth on Nov. 11th, the seventh on Dec. 11th, and the eighth on Jan. 1st, 1904. The feet now appear as in Fig. 6, as shown by plaster casts and

FIG. 6.

Case 3, aged 13 years. Cast of feet, anterior view, each patella facing directly forwards. Taken February, 1904, one year after first operation.

the boy can walk without any artificial supports with his feet flat on the ground. There is still a slight shortening of the calf muscles which will require section of the tendo Achillis to make an absolutely perfect result, but such result is now certain.

As to the exact changes which take place and allow the foot to be corrected I hesitate to give an opinion. In young children there can be little doubt that the cartilaginous bones become softened and can then be remedied, but in an adult, such as I have just described, the altered position must be chiefly or entirely due to giving way of the restraining ligaments and fasciæ. I must own I was surprised that the feet in the case of the woman aged 40 years should have become firm in so short a time and able to bear the weight of her body. In the application of the plaster bandages after reducing the deformity the foot and the lower two-thirds of the leg must first be covered with a

cotton-wool bandage as thick as possible consistent with free control of the foot when applying the plaster bandage. Then the wool must be kept in place with a linen roller bandage and over that the plaster-of-Paris bandage is placed. If there is any doubt about the freedom of the circulation a window should be cut through all the bandages over the instep. This window will not only relieve undue pressure but will also enable us to watch the skin at the point where the greatest pressure has been made and to treat any superficial abrasion that may have been produced by the process of reduction. There is generally some pain for the first 12 hours after operation, but if it continues after that period then the window should be enlarged or part of the bandage or the whole must be removed and reapplied. The greatest care must be observed so as not to do damage by an over-tight plaster bandage.

Causes originating in the muscles themselves.—We have one more class of cases to consider, that is, the contraction of muscles from traumatic injury. Time will not allow me to enter fully into this subject. I will merely remark that I have met a considerable number of cases where isolated contractions have been found in various parts of the body, following a blow or some strain of the part. Many of these cases have existed for a number of years and have been treated by massage, electricity, baths, stretching, actual cautery, and blistering, all of which have failed to produce the slightest benefit, whereas subcutaneous section of the contracted muscles has immediately removed the pain and the difficulties of movement. I will give one instance of this. A boy, aged 14 years, was suffering from one of those contractions at the bend of the elbow. It did not interfere with the ordinary movements of his arm but prevented him from bowling at cricket. Being a very good bowler his parents were anxious he should not be further incapacitated from this acquisition. The tight fibres could be felt in front of the internal condyle of the humerus extending upwards, probably the border of the brachialis anticus. These fibres I divided subcutaneously and the difficulty was removed. This was probably the sort of case which bone-setters sometimes cure by violent wrenching.

Queen Anne-street, W.

MESENTERIC CYSTS.

BY E. P. BAUMANN, M.D. EDIN., M.R.C.P. LOND.,
MEDICAL REGISTRAR AND PATHOLOGIST TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET.

ISOLATED cases of mesenteric cysts had been described as early as the seventeenth and eighteenth centuries, but it was not until the latter half of the nineteenth century that any large series of cases was recorded. Even now the number of fully reported cases is not considerable and instances of the occurrence of these curious pathological conditions of the mesentery seem worthy of being placed on record. A good deal of light has of late years been thrown upon their origin but the text-books still contain little information upon the subject, and before proceeding to describe a case which I had the opportunity of observing it may be of interest briefly to review the present state of our knowledge.

The occurrence of various varieties of mesenteric cysts had long been recognised, but Hahn[1] in 1887 may be said to have been one of the earliest writers to publish a series of cases of sufficient number to justify an attempt at their logical classification. He divided mesenteric cysts into (1) sanguineous cysts; (2) chyle cysts; (3) serous cysts; and (4) echinococcus cysts. Braquehaye[2] shortly afterwards published a *résumé* of the subject and extended Hahn's list by adding to it: (1) congenital cysts (comprising chiefly dermoids but occasionally also cysts arising from the Wolffian body) and (2) cysts of the adjoining organs encroaching upon the mesentery. At the same time he proposes the term "lymphatic cyst" to include the chyle and most of the serous cysts. The list was from time to time still further amplified, as when Moynihan[3] included cases of (1) cystic malignant disease and, in a later paper,[4] (2) cysts with walls the structure of which resembles intestine. This classification was widely accepted until Dowd[5] in 1900 reviewed the whole subject and suggested a simpler and more rational classification in which all forms of mesenteric cysts were divided into three classes: (1) embryonic cysts; (2) hydatid cysts; and (3) cases of cystic malignant disease. The older classifications in the main were based simply upon the examination of the contents of the cysts or upon the structure of their walls. That suggested by Dowd, upon the other hand, is based upon the study of the origin of the cysts.

It had long been known that cysts of congenital origin occasionally were found in the mesentery. Cases of true dermoid cysts had been recorded by the earliest writers on the subject. Cohnheim attributed the origin of these dermoid cysts to the inclusion of aberrant portions of the ectoderm within the ovary in early fœtal life, and for a long time it was believed that all mesenteric dermoid cysts sprang from the ovary and only secondarily became mesenteric. This view seems to be disproved by Langton's case,[6] in which there were three dermoids—one in each ovary and one in the mesentery. The occasional occurrence of congenital mesenteric cysts in connexion with the Wolffian structures was also recognised a number of years ago. Later, when cysts were described with walls the structure of which resembled that of intestine, Brentano,[7] in 1895, hazarded the opinion that in some cases the origin of mesenteric cysts, apart from the occurrence of true dermoid cysts, must be ascribed to some congenital aberration. Eve[8] three years later more definitely expressed the view that such cysts were derived by some irregularity of development from the mesoblastic portion of the intestinal tube. The origin of certain varieties of mesenteric cysts was thus fairly well understood.

The great difficulty lay with the chylous and serous cysts. Rokitansky[9] as long ago as 1842 taught that mesenteric cysts originated in the lymphatic glands by the dilatation of lymph spaces into cavities which subsequently become transformed into single thin- and thick-walled cysts. Many years later Virchow[10] also expressed himself as inclined to attribute the origin of mesenteric cysts to degenerative processes in the lymphatic glands. The same theory was strongly supported by Pagenstecher[11] on the grounds of the discovery by himself and certain other observers of glandular tissue in the walls of some mesenteric cysts. He regarded the degenerative process leading to the formation of cysts as a chronic inflammatory hyperplasia characterised by hyaline changes and softening and believed the whole to be of tuberculous origin. Hahn[12] had somewhat earlier expressed the view that mesenteric cysts might arise not alone from changes in the glands themselves but also from the blocking of lacteals and chyle ducts. This view, which appears at the time to have found wide acceptance, was later corroborated by Carson[13] as the result of an analysis of 11 cases and as recently as 1901 found an advocate in the person of Blum.[14]

Dowd, in the admirable paper above referred to, recast the hitherto accepted views by showing that with the exception of parasitic cysts and cases of cystic malignant disease all forms of mesenteric cyst are embryonic in origin. Moynihan[15] states that congenital remnants of the Müllerian and Wolffian ducts and bodies and of the vitelline duct are regularly found between the layers of the mesentery. It seems probable that, as Dowd suggests, most mesenteric cysts are derived from the inclusion in the tissues of portions of these structures. In view of the rich anastomosis of the chyle vessels and of the fact that ligaturing the thoracic duct or its radicles does not produce the formation of cysts, it is highly improbable that mesenteric cysts should be the result of the occlusion of lacteals. Further, Pagenstecher[16] and others have described chyle cysts lined with epithelial

[1] Berliner Klinische Wochenschrift, 1887, p. 408.
[2] Archives Generales de Médecine, 1892, tome ii., p. 291.
[3] Annals of Surgery, 1887, vol. xxvi., p. 1.
[4] Medical Chronicle, September, 1902, p. 345.
[5] Annals of Surgery, 1900, vol. xxxii., p. 515.
[6] Quoted by Moynihan, Medical Chronicle, September, 1902, p. 345.
[7] Berliner Klinische Wochenschrift, 1895, p. 400.
[8] Transactions of the Royal Medical and Chirurgical Society, 1898, vol. lxxxi., p. 51.
[9] Lehrbuch der Pathologischen Anatomie, Band iii., p. 173, 1842.
[10] Berliner Klinische Wochenschrift, 1887, No. 14.
[11] Ibid., 1895, p. 911.
[12] Ibid., 1887, p. 408.
[13] Journal of the American Medical Association, 1890, vol. xiv., p. 674.
[14] Wiener Klinische Wochenschrift, 1901, Band xiv., p. 1179.
[15] Annals of Surgery, 1900, vol. xxxii., p. 515.
[16] Loc. cit.

cells. This could scarcely have been possible if the cysts had arisen, as was suggested by Rokitansky, from the dilatation of lymph spaces in the glands of the mesentery. The so-called "chyle cysts" therefore probably are embryonic cysts situated in such close relationship to the lacteals that chyle has been infused into them. "Serous cysts" are likewise preformed cysts of embryonic origin, closely corresponding in their structure and contents to those forms of ovarian and parovarian cysts which contain serous fluid. "Sanguineous cysts," which were formerly believed to be either the result of bleeding or traumatism of the mesentery, or of hæmorrhage into pre-existing chyle or serous cysts, are apparently preformed embryonic cysts into which hæmorrhage has taken place. Dowd believes that "cysts with walls which suggest intestinal structure" are probably derived from sequestrations or diverticula from the intestine. "Dermoid mesenteric cysts," which may show a structure exactly similar to that of the ovarian cystadenomata, are probably derived from the sequestration, during the early period of development, of portions of the ovary or parovarian body.

In a word, then, all these cysts of the mesentery are preformed and of congenital origin, whilst the nature of their contents is largely a matter of chance. This view has since been accepted by Moynihan,[17] Fawcett,[18] and other recent writers on the subject. It seems to offer the most satisfactory explanation of the occurrence of mesenteric cysts.

Description of a case of mesenteric cyst.—The patient whose case I had the opportunity of observing was a female infant, aged eight months, who was admitted to the Hospital for Sick Children, Great Ormond-street, on Nov. 12th, 1902, as a case of intussusception. The mother stated that the baby had been in good health until Nov. 9th, when she began to vomit and seemed out of sorts. The sickness continued at intervals that day and the next. On the 11th the child grew very collapsed and the vomiting became almost constant. The mother now noticed that the vomited matter was brown and smelt like a motion. This state of affairs continued until the 12th when the child was seen by a medical man who diagnosed intestinal obstruction and at once sent the child to the hospital. Questions as to the condition of the stools elicited the fact that nothing had been evacuated from the bowels since Nov. 8th, when a normal motion was passed. No mucus or blood had been passed per rectum. Up to the onset of the present illness the child, who was breast-fed, had enjoyed good health. The patient, who was a fat, well-nourished infant, was admitted in an extremely collapsed condition. The abdomen was tumid and distended and there was felt an indefinite rounded mass to the right of, and a little above, the umbilicus. The diagnosis of intestinal obstruction due to intussusception was made and laparotomy was decided upon. Hot bottles were applied and an injection of half a pint of saline solution was made under the skin. The operation was performed shortly after admission by Mr. H. Stansfield Collier, to whom I am indebted for permission to use the clinical notes of the case. A small incision was made to the right of the middle line immediately above the umbilicus. Instead of an intussusception a tumour was felt pressing upon the small intestine. The incision was then enlarged and the tumour was brought more clearly into view. It was found to be a firm-walled cystic tumour of the size of a small apple, situated between the folds of the mesentery at the level of the lower end of the jejunum in which it had produced a kink. The tumour was drawn into the wound and, after being aspirated by means of a trocar and cannula, laid open with a scalpel. About an ounce of yellow viscid contents was evacuated. The gut below the level of the cyst, which had previously been empty and collapsed, immediately began to fill. Owing to the extremely collapsed state of the patient no attempt was made to remove the cyst. It was packed with gauze and replaced along with the bowel attached to it. Adequate provision for drainage having been made, the wound was closed and the child was hurried back to bed. 30 minutes after leaving the theatre breast-feeding was begun. The child never rallied. Seven hours after the operation she had a severe bout of vomiting and death occurred. Before death the temperature rose to 106° F.

On microscopical examination the fluid contents of the cyst were found to contain, besides a large quantity of amorphous débris, a number of cholesterin crystals. Owing to an unfortunate mishap the fluid was not preserved for chemical examination.

At the necropsy the organs generally were healthy. The cyst was of the size and shape of a somewhat flattened racquet ball, measuring two inches by one inch. It was situated between the layers of the mesentery of the jejunum with its longest diameter at right angles to the long axis of

Specimen of mesenteric cyst. A portion of the wall of the cyst has been removed and a bristle passed through the lumen of the gut attached to the distal pole of the tumour.

the bowel. The intestine coursed over, and was intimately attached to, the distal pole of the tumour. (See figure.) The bowel was not constricted and showed no unusual appearances beyond some smoothing out of the rugæ of the mucous membrane at the point of attachment. The cyst had firm walls, about a quarter of an inch in thickness, which cut almost like cartilage and did not collapse when an incision was made. Its inner surface was traversed by many fine trabeculæ of fibrous tissue and it contained a small quantity of blood-stained fluid; no hairs or other contents characteristic of dermoid cysts were discovered. The mesenteric glands were generally somewhat enlarged but they presented no evidence of tubercle.

The tumour was examined histologically by Dr. F. A. Bainbridge, late clinical pathologist to the Hospital for Sick Children, who reported as follows: "On microscopic examination the cyst wall is seen to consist almost entirely of fibrous connective tissue on the outer surface of which are numerous blood-vessels and a layer of flattened epithelial cells (probably peritoneum). The inner surface of the cyst wall is slightly irregular and covered by several delicate layers of fibrin inclosing a few leucocytes between them. No muscular tissue is present."

There seems little doubt then, that we have here to deal with a cyst of congenital origin which must be classed among the group of embryonic cysts of the mesentery.

Harley-street, W.

[17] Medical Chronicle, September, 1902, p. 345.

[18] Transactions of the Pathological Society of London, 1902, vol. liii., p. 406.

AMAAS, OR KAFFIR MILK-POX.

BY W. E. DE KORTE, M.B. LOND.

AMAAS, or milk-pox, may be defined as a specific contagious, eruptive fever closely resembling small-pox in appearance, yet differing from it in some respects. The question which immediately suggests itself is whether the difference between small-pox and amaas is such as to constitute them distinct diseases or whether the latter is not variola modified by some undetermined factors. It has been also suggested that amaas is chicken-pox modified by race and climate. When contemporary epidemics of these two diseases are seen side by side, as occasionally occurs in the same community, the differential diagnosis presents little difficulty. The characters of the prodromata, of the rashes, and of the "clinical courses" of these two diseases do not appear to coincide. Moreover, the indubitable fact that vaccination immunises against amaas renders it well-nigh certain that we are not dealing with modified chicken-pox but, on the contrary, lends great weight to the view that amaas is closely allied to small-pox. As shown in

a *résumé* of 13 cases appended, the fact that it was possible to vaccinate, though only in a modified degree, convalescents from amaas would indicate that the disease in question is not ordinary European variola, "for at Glasgow during five years 52 small-pox patients were vaccinated at various periods during the stages of eruption and convalescence twice, or even thrice, but in no single instance was any reaction manifested."[1]

The following were the differences observed between variola and amaas:—1. The predilection of amaas for the aboriginal native rather than for the half-caste, both living under similar conditions and both being unvaccinated, and the almost entire immunity of the European even though unvaccinated. Thus, in Graaff Reinet, Cape Colony, where these notes were made, out of 125 cases admitted to the lazaretto only two occurred in poor whites, yet the surroundings of these unfortunates are for the most part quite as unsavoury as those of the natives. 2. The low mortality for all ages among the unvaccinated. Thus, of 97 cases admitted to the local lazaretto, where the patients were huddled together on the floor, without nursing of any kind, and reduced to the utmost shifts, only three deaths occurred which could fairly be ascribed to the disease. Thus the mortality for this particular series of cases was only slightly over 3 per cent. 3. The disease is milder among sucklings and children than among adults, frequently aborting in the former. It cannot be conjectured that some degree of immunity had been conferred on the nurslings by vaccination of their mothers during the period of gestation, for in no instance could it be ascertained that vaccination had been so performed. 4. The absence of secondary fever in amaas, even in confluent cases. Pustulation occurs much earlier and is a more gradual process; the degree of pus formation is also less than that observed in small-pox. 5. The nature of the resulting scar. Instead of the depressed foveate scar of small-pox, amaas, when it does scar, which is by no means always the case, leaves an irregular, stellate depression the edges of which present a worm-eaten appearance. 6. The vesicle is not so completely loculated as in variola, though partially divided by fine trabeculæ. 7. Owing to the spread of the epidemic the magistrate ordered the vaccination of all coloured natives. About a dozen cases were admitted to the lazaretto displaying vaccinia and amaas (Fig. 1), neither disease being apparently modified by the other. It can definitely be said that amaas was not aggravated by the superimposed vaccinia. The type assumed by the major disease in pre-vaccinated cases was neither more nor less severe than the ordinary run of cases and certainly not nearly so severe as occurred in some unvaccinated sufferers. In juxtaposition to the observation that the simultaneous development of the eruptions of the two diseases occurred in the same person is the fact that the course of vaccinia in the subjects of amaas, after the latter disease has run its course, is undoubtedly delayed and modified to a varying degree in all those experimented on. The vaccinations were done between the third and fifth weeks after the commencement of the eruption. Whether, therefore, at a later date the tissues contain more of the antitoxic or anti-microbic substance for neutralising the poison of vaccinia cannot be said to have been determined. An assumption of this kind, however, is negatived by the observations of Dr. H. Sinigar of Leavesden Asylum who reports: "Out of 45 persons who provided evidence of previous small-pox 40 were successfully vaccinated."[2]

FIG. 1.

From a photograph of a patient showing the eruption of both vaccinia and amaas.

As only patients in an advanced state of amaas were brought to the lazaretto and owing to the impossibility of extracting the sequence of events in the development of their complaints from raw Kaffirs there was for a while considerable obscurity as to the clinical course of the disease in its earlier stages. A case occurring in private practice in a white patient afforded an opportunity of observing the various stages of the disease.

A girl, aged three years, unvaccinated, suffering with a cold in the head and running at the nose for several days, complained of sore throat for 24 hours. The glands of the neck were tender and slightly enlarged. On the second day of the disease the temperature was 105° F and the child vomited and was seriously ill. On the third day of the disease a few acne-like spots appeared on the bridge of the nose, on the backs of the hands, and on the flexor surfaces of the forearms. The temperature was 102°. (When time is stated in terms of hours it refers to the period which had elapsed after the beginning of the eruption.) At the twelfth hour the eruption covered the back and the limbs; there were only a few spots on the front of the chest and abdomen. The eruption felt shotty and consisted of an irregular macule with a small conical central elevation, yellowish in colour. At the twenty-fourth hour the temperature was 98·4°, the rose spots were more papular, and where the papules were close together their areolæ coalesced. At the thirty-sixth hour the central little cone had grown to a flat-topped vesicle. At the forty-eighth hour most of the papules had become flat-topped vesicles. At the sixtieth hour most of the vesicles had a depressed centre; a few were dome-shaped. The temperature was 102°. There was some eruption in the nose, throat, and ear. There were considerable itching of the skin and conjunctivitis. At the seventy-second hour the vesicles were somewhat larger; the other characters were the same. At the ninety-sixth hour the vesicles were decidedly pearly in appearance and dome-shaped; pustulation was commencing. A few vesicles, especially on the face, were more fully pustular. The temperature was 100°. The rose-red areola was confined as a narrow band to the base of the vesicle. In severe cases, however, the areola extends for some distance round the pock. At the hundred and eighth hour the temperature was 102·4°. The vesicles were losing their pearliness and were becoming more waxy-white in colour. At the hundred and twentieth hour a considerable number of the vesicles were only sero-purulent and devoid of any areola. The temperature was 101°. Pustulation might be said to be complete at the hundred and twentieth hour. At the hundred and thirty-second hour the temperature was 101°. The patient was much better and ate and slept well; her recovery from this time was uninterrupted. At the hundred and forty-fourth hour the temperature was 100°. Most of the pustules on the face and back had ruptured; those on the face which were not broken were beginning to scab. Most of the pustules on the legs and the arms had

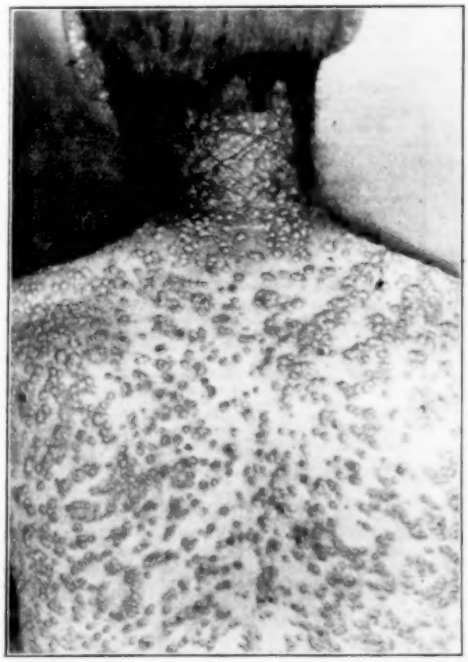
[1] Dr. R. S. Thomson and Dr. J. Brownlee: THE LANCET, Oct. 22nd, 1898, p. 1061.

[2] THE LANCET, April 5th, 1902, p. 951.

collapsed without any scab formation; a certain proportion, however, scabbed over.

The process of collapse and scab formation is as follows (*vide* Fig. 2, which shows the back of a white man covered

FIG. 2.



Eruption of amaas on the back of a white man.

with the pustules of amaas). It will be seen that a small dark dot occupies the centre of each pock. This appearance is due in part to umbilication and in part to alteration in texture of the wall of the pustule at this spot. The centre of the dome of the pustule becomes bluish in colour and slightly depressed; a rent occurs in this depression through which some of the contents escape. The walls of the collapsed pustule together with the inspissated contents are separated at the base of attachment and shed as a small brownish scale, exposing to view a somewhat raised floor, dusky red in colour, which fades on pressure. After some further changes in the European a pigmented stain persists for some time, while in the native, owing to the destruction of the rete Malpighii and its contained colouring matter, a white spot surrounded by a halo of dark pigment marks the site of the pock. The patient whose case I have just narrated being a highly neurotic subject the course of the temperature is probably not typical. The natives suffer from coryza, headache, backache, and a high temperature for three days, on the third day the rash appears, and from that moment they practically get well. Most of them suffer from huskiness of the voice and some difficulty in swallowing, and the younger patients from a slight tracheitis or bronchitis. This is the usual run of case. Much severer examples occur in which the symptoms are greatly aggravated, the disease becomes confluent but only on the face and legs, rarely on the arms or trunk. At the height of the pustular stage there is much subcutaneous œdema. The lips, the nose, and the eyes are much swollen. The mouth remains open and saliva trickles out. The eyes can hardly be opened. The general contour of the face is so altered as to make the patient unrecognisable. The teeth and gums are covered with sordes. The tongue is harsh and dry and the breath is foul, the patient presenting a most loathsome appearance.

The following is the vaccination history of two European children, three native adults, and nine native children, all of whom were convalescing from amaas at the time of the vaccination.

CASE 1.—A boy, aged 12 years. He had been vaccinated on two previous occasions unsuccessfully. There were no vaccination marks. During the fourth and fifth weeks after the eruption of the disease he was twice vaccinated with humanised lymph without the least effect. A week later, on Oct. 2nd, he was vaccinated in three places with fresh calf lymph. On the 9th one well-marked vesicle with slight areola occupied the site of each insertion. On the 11th one vesicle had disappeared; the other two were scabbing over. He presented the appearance of a reaction on a person already partially protected by vaccinia.

CASE 2.—A girl, aged three years. This patient had never been vaccinated. Four weeks after the date of the eruption she was vaccinated with humanised lymph; no result followed. On Oct. 2nd she was revaccinated with calf lymph. On the 9th there were two well-marked vesico-papules. On the 12th a small red vascular papule marked the site of each inoculation—a reaction precisely similar to the previous case. It is interesting to note that neither of these children reacted to human lymph while both did to calf lymph. Arm-to-arm vaccination in two subjects of the disease experimented upon took in the manner described.

CASE 3.—This patient was an adult red Kaffir who was vaccinated for the first time with calf lymph, strict antiseptic precautions being adopted. A photograph showed well-marked vaccinia eight days after inoculation, also the sites of the pocks seen as white dots due to absence of pigment surrounded by dark rings caused by increased pigmentation. This patient—the only one—presented a typical areola, so that the reaction in this case was complete. The patient had been 24 days at the lazaretto when vaccinated.

CASES 4 AND 5.—These patients, two women, were vaccinated for the first time on June 28th. A photograph taken on July 8th showed both patients presenting typical vesicles having raised edges and central depressions. The slow evolution of the vaccinia was probably due to the modifying influence of the amaas and not to attenuation of the lymph employed.

CASE 6.—A girl, aged three years, vaccinated from Case 3 on one spot which developed into typical vaccinia.

CASE 7.—This patient was vaccinated with the rest on Sept. 30th for the first time. On Oct. 7th there were three vesicles, one on each vaccinated area. On the 16th there were two scabbed pustules; one vesicle had disappeared.

CASE 8.—A boy, aged three years. On Oct. 9th there was one vesico-papule on each of the two vaccinated spots; the third insertion had disappeared.

CASE 9.—A girl, aged four years. On Oct. 7th she had a well-vesiculated appearance. The vesicles had coalesced; there was slight roseola confined to the base of the vesicles. The vesicles were very vascular. On the 15th the vesicles had become three scabbed pustule; there was no areola.

CASE 10.—A boy, aged three years. On Oct. 7th there were well vesiculated areas without roseola. On the 11th the vesicles had run together; there was no roseola. The vesicles were very vascular. On the 16th there were three scabbed pustules; there was no areola.

CASE 11.—This patient was aged ten years. On Oct. 8th there were three small papules. On the 11th no vesicles had formed and the papules were quite distinct; there was no areola.

CASE 12.—A girl, aged one year. On Oct. 11th a single vesicle occupied the site of each insertion.

CASE 13.—A girl, vaccinated on Oct. 7th. On the 16th there was a papule on the site of each of two insertions; the third had disappeared.

CASE 14.—This patient was vaccinated on Oct. 16th in three places with lymph taken from the patient in Case 10. On the 23rd one of the above insertions had developed into typical vaccinia. The quantity of lymph obtained from the patient in Case 10 was very little, probably not sufficient to have produced more than the above result.

Summarising the above, with the exception of the patient in Case 3, who gave as complete a reaction as an ordinary primary case, all reacted in varying degrees, like individuals more or less protected by previous vaccination.

Bacteriology.—As might be expected, this is of a negative kind. Smears on cover-glasses made from the contents of the pock at all stages disclosed no organism which could in any way be connected with the disease. If proper precautions were taken to prevent the admixture of any extraneous organism in the collection of the amaas matter

A COMPARATIVE TABLE OF SMALL-POX, AMAAS, AND OF TWO DISEASES OF A VARIOLIFORM NATURE WHICH HAVE BEEN DESCRIBED BY DR. BROWNLEE AND DR. THOMSON AND BY DR. IZETT W. ANDERSON.*

	Amaas.	Natural small-pox.	Infectious disease in Lascars.	Varioloid varicella.
Incubation ...	10 to 14 days.	10 to 14 days.	10 to 14 days.	14 days.
Effects of vaccination and previous attacks of variola ...	Sure preventive. Only one case occurred, in a woman, aged 65 years, who had suffered from small pox 60 years previously and bore unmistakeable evidence of the attack.	Sure preventive. Second attacks rare.	In 11 cases previous vaccination had no immunising effect. Previous attacks of variola seemed to have little controlling effect.	Disease occurs equally in vaccinated or unvaccinated persons. It occurred in those deeply pitted by antecedent small-pox.
Effects of vaccination during convalescence	Modified vaccinia.	None at all.	Four out of five patients were successfully vaccinated; the fifth failed; this patient had previously suffered from small pox.	Not noted.
Date of eruption	Third day.	Third day.	First day.	In the course of the third day of the disease.
Distribution of rash on the body ...	The body generally, not uniformly; always most markedly on the face, front of the legs, extensor surfaces of the forearm, palms of the hands, and soles of the feet.	As for amaas.	No special affinity for the face. No eruption on the palms of the hands and soles of the feet. On the legs elements were more sparse and scattered. The back was chiefly affected.	—
Initial rashes	Were not observed.	Occurred.	Not mentioned.	Not mentioned.
Evolution of the pock ...	In from 36 to 48 hours the macule with its small conical centre has passed through the papular stage and has become a fully developed flat-topped vesicle. The vesicles are partially divided by fine trabeculæ. In 96 hours the vesicle is pearly and in 100 hours is waxy-white in appearance. The polynuclear lymphocytes are losing staining reactions and becoming pus cells. A number of pustules are without areolæ. Umbilication and pseudo-umbilication are present.	Vesicle attains limit of its growth about the fifth day of the eruption. Loculated. Pustule formed on the eighth or ninth day surrounded by a vivid areola. Umbilication present.	Vesicles almost entirely absent; such as do exist resemble small bullæ such as might have been produced by scalding water. Vesicles partially divided by fine trabeculæ. Vesicular contents originally clear become cloudy and distinctly sero-purulent; but in no instance were true pustules formed. Pseudo-umbilication produced by desiccation of central portion of vesicle.	Papular stage lasts from 24 to 48 hours. Eruption presents papular and vesicular stages and only in some cases the pustular stage. Vesicles in some cases resembling those of variola and in others those of varicella. Umbilication was not constant.
Fever	Defervescence with first appearance of eruption. No secondary fever.	Defervescence with first appearance of eruption. Secondary fever.	No defervescence as in variola. No secondary fever.	The temperature was of a remittent type without secondary fever.
Race and age	Predilection for individual negroes in unvaccinated community, also individual Europeans but in much lesser degree. Disease mild in sucklings and children, often aborting in former. Fatality for all ages is low.	All unvaccinated persons susceptible with trifling exception. Very fatal to children under five years. Fatality for all ages is high.	Confined to Lascars. Out of 250 English workmen exposed to infection not one contracted this disease. No mortality.	Chiefly among natives. Europeans susceptible. (?)
Initial symptoms... ...	Headache, slight cold in the head, slight sore throat, glands of the neck enlarged. Vomiting and occasional backache.	Backache, headache, vomiting. Sore throat and enlarged glands not usual.	—	Constant catarrh of the throat, with eruption on the soft parts.

* Dr. Izett Anderson: Epidemic Varioloid Varicella in Jamaica, Transactions of Epidemiological Society of London, vol. ii., p. 414.

no organisms could be discovered in the contents of the vesicle or pustule. Nor could any cultivation be obtained on the ordinary culture media. The following organisms were very often present in specimens of amaas lymph: staphylococcus pyogenes aureus, staphylococcus cereus flavus, staphylococcus albus epidermidis, and bacillus subtilis. By first washing the pock with a strong solution of an antiseptic and passing a sterile capillary tube into the interior of the pock its contents could be collected free from all contaminating organisms. With regard to experiments made on animals eight guinea-pigs were found apparently to be immune to the action of amaas lymph, whether inoculated as vaccine or injected into the peritoneal cavity. Experiments on calves were inconclusive but nothing like typical vesicles were produced by inoculating these animals with amaas lymph. A subcutaneous injection of two drops of amaas lymph was given to a monkey without producing any visible effect. To ascertain whether the injection of amaas matter had exerted any influence on the monkey[2] it was subsequently vaccinated with calf lymph on the back. By the fifth day a number of vesicles made their appearance; some of these ran together but showed no umbilication. There was no areola. The axillary glands were slightly enlarged. By the eighth day brown scabs had formed on what had now become pustules which were involuting. The result was such as one would have expected had the monkey been protected by previous vaccination. This animal undoubtedly reacted to vaccinia in exactly the same manner as human beings do after they have had amaas.

[2] Compare Cheveau's experiments on the horse and Calmette's investigations on the rabbit. Annales de l'Institut Pasteur, No. 3, March 25th, 1901.

Summarising the appended table, it is evident that amaas cannot well be confounded with either the infectious disease in Lascars or with varioloid varicella. When compared with variola such a definite statement cannot be made, for it will be seen that amaas resembles small-pox in many particulars; the differences which exist between these two diseases appear to consist more in degree of virulence than of kind.[3] The provisional conclusion arrived at on the relationship of amaas to variola is that the former is small-pox mitigated by some undetermined factor or factors.

Graaff Reinet, Cape Colony.

A CASE FOR DIAGNOSIS.[1]

BY W. JOHNSON SMYTH, M.D. EDIN.,
LATE SENIOR MEDICAL OFFICER, KENT COUNTY ASYLUM, MAIDSTONE.

THE patient was apparently in good health till three and a half years ago when the train by which he was travelling was derailed at midnight. Early next morning he was alarmed to find himself lying between two dead fellow passengers and five days after this his ill-health began. This consisted in frequent vomiting, followed by great loss of strength and in his being invalided home. During the interval elapsing between the railway disaster and last

[3] Cf. Notes on a Mild Type of Small-pox, Variola Ambulans, by Dr. F. Montezambert, Brit. Med. Jour., May 11th, 1901.

[1] A paper read before the Bournemouth Medical Society on March 9th, 1904.

autumn he had been under the care of 20 medical men and the symptom of vomiting could be relieved only by the hypodermic administration of morphine, although many other remedies had been tried. His family medical adviser recommended his relatives to send him to Switzerland and he had reached London late last year in charge of a nurse who had instructions to give him half a grain of morphine whenever vomiting set in. The patient, however, had a considerable sum of money in his pocket and being fond of a gamble put most of this on a horse with unfortunate results. The vomiting set in with exceptional severity and only large doses, from a half to one grain, of morphine relieved him.

Such were the circumstances of the case when I was asked to take charge of the patient. He came under my care direct from London. He complained of frequent attacks of vomiting, headache, insomnia, or when asleep of nightmare or sensuous dreams. He admitted having had syphilis six years previously; he believed that he had received mercurial treatment, though for a short period. His habits were temperate till the present trouble began. He was unmarried, aged 38 years; his height was 5 feet 8 inches, and his weight was 8 stones 6 pounds. He was much emaciated. As regards the cerebro-spinal nervous system much emotional weakness was evident. The will was infirm to a high degree. His memory was good but his judgment was diseased. His ideas were grandiose; he talked as if he had very ample means, which was untrue, and he was extravagant in every direction of thought. He was harmless to others but he often talked of suicide. He informed me that his people wanted to get him certified as insane but that no medical man would risk it. I certainly considered him fairly on the borderland, if not within the bounds, of certifiability. He suffered from a slight degree of myopia. The left pupil was twice as large as the right, which was of normal size, and was circular and free from puckering. He suffered from associated iridoplegia in the left eye, the iris responding to neither light nor accommodation for distance. The other organs of special sense were normal. From a later examination of the retinæ they were found to be free from syphilitic or albuminuric deposits. Impulses through the motor nerves were feeble, badly sustained, and this was most marked in the lingual, labial, and facial muscles. He had an occasional difficulty in starting a sentence. The function of the sensory nerves was exalted throughout. The knee and other deep reflexes were exaggerated. The superficial reflexes were the same. No girdle pains were complained of at this stage. The muscular sense was preserved. There was much wasting of the muscles but quite symmetrically so throughout the body. A distinct cautiousness of gait was noticeable but the ataxia was not marked. The temperature was normal when first seen but there was a rise of from 1° to 1·5° F. every evening. The integumentary system was normal. There was no albumin or sugar in the urine which was normally acid with a specific gravity of 1020. The patient complained of frequently vomiting food and when there was no food present in the stomach he vomited watery, bile-stained material. Because of the severity of this symptom he said he had often to be fed per rectum for days at a time. Later I made careful observations as to the nature of the vomit. It contained food, hydrochloric acid, and bile pigment, but no blood at any time. No fæcal matter was ever vomited. On examining the abdomen nothing abnormal could be found nor was there pain on pressure over the stomach or elsewhere. He suffered from occasional constipation but the stools were natural in form and colour; blood was never noticed. No hæmorrhoids were present. The heart and the lungs were quite normal.

I made a close inquiry from the nurse and, whilst she corroborated the history of vomiting as narrated by the patient, she alleged that the patient, in her opinion, had the power to induce vomiting at will and did so in order to get the morphine. On my suggesting that she might go away she said that the patient "would howl his head off" if she was not at hand to give him morphine. I got rid of the nurse on the next day. The patient received a severe "talking to" and I insisted on his playing a "straight game" or else I would not attend him. He was allowed a glass of benedictine before meals (not a bad remedy for mal de mer). He was given a mixture of bromide of potassium and syrup of glycerophosphates three times a day after meals. He had an hour's massage commencing at 10 P.M.

For six weeks no vomiting took place, the patient slept well and put on six pounds in weight but all the other signs remained the same. At the end of this period I had to leave Bournemouth for ten days but asked a medical friend, who took the case over during my absence, not to give morphine, if possible, till I returned. As soon as the patient heard that I had left he grew violently sick, sent for my medical friend, and swore by "bell, book, and candle" that I promised faithfully that if he got sick during my absence he would get morphine. My substitute refused the morphine but the patient declared that he would jump out of the window if he did not get the drug. So to prevent this my friend gave half a grain of morphine hypodermically. During those ten days the patient had a daily return of sickness and was given morphine once or twice a day, never more than half a grain at a time.

On my return I was surprised at the turn that things had taken and I found the patient suffering from the most distressing form of vomiting I ever witnessed. Ice, chloroform, chloretone, and hot drinks were tried but in vain; the sickness continued and at this stage the patient for the first time complained of acute neuralgic pains around the lower ribs. Morphine alone seemed to give relief. The morning temperature was 101° and the evening temperature was 102·2°. So great was his distress that I feared acute mania would develop. During the four days that elapsed from my return the patient was given three grains of morphine whilst feeding per rectum was constantly carried out, as his stomach would retain nothing. On the fourth day he had a very violent attack of pain and vomiting and half a grain of morphine was given at 3 P.M. At 4 30 I was sent for, as the patient appeared to be dying. I found him unconscious; Cheyne-Stokes breathing had set in and the end seemed to be near. There was no sign of contraction in either pupil, both being equally dilated. I injected one-sixtieth of a grain of strychnine and 40 minims of ozonic ether, after which the respiration and the pulse improved slightly. A medical friend saw him at 5 P.M.; we injected more strychnine and ether and though the patient rallied temporarily he again got worse and apparently died at 5 30 P.M. After observing the respiration and cardiac movement cease we stretched the limbs into position, covered him up somewhat, and had been some time discussing the case when to our horror the patient gave a long inspiratory snore that somewhat disconcerted us. I think the respiratory and cardiac movement must have been quite two minutes in abeyance, during which period the corneal and plantar reflexes were quite gone and the pupils were widely dilated. On this renewal of respiration and circulation taking place we administered hot nutrient enemata and with an occasional dose of strychnine, digitalin, and ether the patient was kept alive till 9 P.M. on the second day after his apparent death. During this period he recognised his relatives and myself, his corneal and other reflexes returned, but the Cheyne Stokes breathing continued less or more till the end. He was unable to swallow food during this time and his speech was unintelligible. I most carefully examined his retinæ during this period; apart from enormous congestion of the blood-vessels they were quite normal.

On the day following death I made a post-mortem examination of the brain. The meninges were deeply congested and the pia mater and arachnoid were matted together, thickened, and milky in appearance over the frontal and anterior half of the parietal lobes, to which they were closely adherent. The grey and white matter was congested; the lateral ventricles were dilated and contained excess of fluid. The choroid plexuses were enlarged and had a beaded and gelatinous appearance. The brain substance as a whole was preternaturally soft. No hæmorrhage, gumma, or tumour of any sort was present. Professor W. S. Greenfield of the University of Edinburgh kindly examined the medulla for me but found no evidence of disease in it.

The following are some of the points of interest in this case 1. The onset of the leading symptom—vomiting—began soon after the railway disaster. 2. It is evident that morphinomania was fairly established. 3. Did the morphinomania exaggerate the vomiting? Certainly, the latter was apparently kept in obeyance by the treatment which the patient received during the first six weeks he was under my care. 4. Was the case one of locomotor ataxia, general paralysis, or some other disease? Most of the subjective and objective symptoms apply equally to locomotor ataxia and general paralysis, whilst if, on the one hand, the vomiting and the

girdle pains point to locomotor ataxia, the exaggerated knee-jerks, the mental deterioration, and the post-mortem appearances point to general paralysis. Personally, although I certified the death as due to locomotor ataxia, I believe it to be one that goes far to sustain Dr. F. W. Mott's view (as mentioned in the *Archives of Neurology*) that the older clinicians were in error in describing two diseases locomotor ataxia and general paralysis, there being only one disease here—"tabo-paralysis"—the former being varieties of the latter. I think that the patient's final collapse was due to an acute congestive attack—severer than ever he previously experienced—commencing in the medulla, at first involving the vomiting centre, and, after paralysing this, exciting and then paralysing the respiratory centre that lies close by.

Bournemouth.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF SEPTIC PNEUMONIA; ABSCESS OF THE LUNG; ASPIRATION; RECOVERY.

BY ARTHUR J. SHARP, M.D. LOND., F.R.C.S. ENG.,
AND
HUGH N. KEELING, L.R.C.P. LOND., M.R.C.S. ENG.

THE patient was a single woman, aged 31 years. Her family history was good with the exception that one sister died at the age of 41 years from phthisis, another at 37 years from heart disease following rheumatism, and a third at 34 years from "consumption of the bowels." She was a tall, thin woman, with a sallow complexion and had enjoyed good health with the exception of occasional colds. During the summer of 1903 she felt out of sorts—a little overworked and noticed that her breath was foul owing to numerous carious teeth and stumps. On Nov. 18th, 1903, the unsound teeth were extracted under ether, both the administration of the anæsthetic and the subsequent recovery being uneventful. The dentist was struck by the unusual fœtor about her mouth. She returned to her employment three days later, there being neither cough nor expectoration at this time. On the 27th she had a rigor in the evening and was seized with severe pain below the right nipple. On the next morning there were no abnormal physical signs discoverable; her temperature was 100° F.; her pulse and respirations were respectively 92 and 24 per minute. The diagnosis was acute pleurisy, probably of the phrenic surface of the lung. Two days later a short cough commenced, with limited expansion of the thorax on the right side. On Dec. 2nd her temperature was 100° and the pulse and respirations were respectively 96 and 20 per minute. The pain was less and the expansion was better. There were slight impairment of resonance and deficient entry of air at the right base behind. The resonance elsewhere was good. On the 4th her temperature was 102·8°, her pulse-rate was from 100 to 112, and her respirations were 32 per minute. There were increased dulness at the right base behind and a slight friction sound below the nipple in front. There was no expectoration. On the 6th the middle two-fourths of the right lung posteriorly showed impaired resonance and in places there was tubular breathing. On the 7th some extremely offensive expectoration appeared for the first time. An aspirator trocar and cannula three inches long driven deeply through the ninth intercostal space considerably posterior to the scapular angle (the only place where there now seemed to be any dulness) was felt to move freely within a cavity and two and a half ounces of horribly foul pus were evacuated in this way, suction being strongly maintained until only blood was forthcoming. A diagnosis of localised empyema was made and the patient was removed to a hospital. It is noteworthy that her temperature was practically normal from this date onwards, although her general condition was exceedingly critical for some days. On the 8th an operation as for empyema was performed by resecting the ninth rib. Although a bead of dried pus could still be seen clinging to the cutaneous end of the track of the aspirating cannula no infection of the pleura appeared to have taken place. Some serum escaped from the pleural cavity when opened, but though the lung was punctured once or twice nothing further abnormal was found. During the next few days the patient had recurrent bouts of cough, during which the odour of the breath and sputum were indescribably foul. In the intervals of these attacks it was noticed that the breath and sputum both remained (or gradually became) free from distinctive odour. The operation wound continued inodorous throughout, the patient gradually began to recover strength, and the sweating, cough, and expectoration diminished. On Jan. 4th, 1904, four weeks after the aspiration, abnormal physical signs were only to be found over an area three inches or less in diameter at the site of the puncture, and here the breath sounds, voice sounds, and resonance were all somewhat deficient. She was discharged on the 5th and within the next ten days the cough entirely ceased.

Considering the foul state of the mouth when the teeth were extracted it is easy to suppose air-borne infection to have taken place, but it is difficult to understand how the dental operation could have been avoided. Presumably the risk would increase with long postponement. It is interesting to note that simple aspiration may (as in this case) suffice, since subsequently to the aspiration recovery was speedy and uninterrupted and the quantity of sputum expectorated was insignificant. At the end of April she was in good health.

Whitby, Yorkshire.

NOTE OF A CASE OF SHOULDER PRESENTATION ENDING BY NATURAL DELIVERY.

BY THE RIGHT REV. J. E. HINE, D.D. OXON., M.D. LOND.,
BISHOP OF ZANZIBAR.

I HAD read years ago in books of cases of this kind ending satisfactorily by the *vis medicatrix naturæ* but I had not myself seen one, and the circumstances of the present case being somewhat unusual it seems worth while sending a note of it to THE LANCET.

I was staying last January in a remote village on the mainland in the Yao country of Central Africa near the Rovuma river. Late at night I was asked by a native teacher to go to see a woman who had been in labour for two days and the people did not know what to do to help her. I may say that it is very unusual for the natives in this part of the country to call in any outside assistance for women in labour. The greatest secrecy is kept and the matter is intrusted to certain wise women of the village and no man is allowed to approach anywhere near the scene. This particular woman, however, was a Christian, the wife of a teacher, and the native prejudice on his side, at any rate, was not so marked as usual. I went with the messenger and was taken about a mile into the forest, my progress being interrupted from time to time by sorties of excited women who tried to prevent my going. However, I got at last to the place and found the patient lying out in the open beside a wood fire with a group of women (whether wise or not wise I should not like to say) sitting round her. She was a young girl, not more than 16 years old, a primipara. Labour had come on at full term more than 48 hours previously and the membranes had ruptured some hours before I arrived. The right arm of a fully developed though evidently dead but not decomposed fœtus was prolapsed, lying outside the vulva. I had great difficulty in getting the people to let me make an examination but after a time I succeeded and found that the os was only dilated sufficiently for the passage of the arm, the uterus was firmly contracted down on the fœtus, and all labour pains had ceased. The patient was in fairly good condition. The pulse was regular and not very weak and there was no very marked distress. It seemed, however, to me that the condition looked about as unfavourable as it well could. I had no chloroform and no instruments of any kind with me and anything like operative interference, or manual interference either, was impossible under the circumstances. I told the woman and her friends that I did not see that I could help her, but I gave her a grain of opium more for the sake of "doing something" than with any hope of relief. It appeared to me perfectly impossible that delivery could take place under the conditions—a transverse-

presentation, a young primipara, a fully developed fœtus, a rigidly contracted uterus, and more than two days in labour. So I dropped the medical character and assumed the priestly and prepared her for death which seemed to me inevitable. I then went away and left her. About an hour aftewards a messenger arrived and told me that the child had been born; nothing more had been done but pains had come on and delivery had taken place. On the next morning I went to see the mother and found her sitting up with a group of friends round the fire in her hut looking quite comfortable as if nothing particular had happened. What actually did happen I could not find out. My questions spoken in Swahili had to be translated into Makua and the difficulty of expressing technical terms and translating untechnical answers through media of this kind is a very great one. Whether the favourable result was ascribed to the miracle-working powers of the bishop, or whether it was the grain of opium, or whether it was due to some native charm I could not find out. It all ended happily. One sees strange things in the untrodden wilds of Africa!

Masasi, German East Africa.

A CASE OF CARBOLIC POISONING IN AN INFANT.

BY LOUIS E. STEVENSON, B.A., M.B., B.C. CANTAB.

I CIRCUMCISED an infant, six weeks old, on March 10th of this year. The wound was dressed with lint soaked in carbolic oil (1 in 20). The little patient was very well all day, sleeping most of the time, and had a good night. Early next morning he vomited and had apparently nausea at intervals during the day but did not vomit any more. He had two normal motions. During the afternoon the napkins were stained a dark colour. The carbolic dressing was discontinued. On March 12th he was rather restless with no sound sleep. The appetite was poor and the urine was scanty and dark-coloured. He had two motions, one of which was dark in colour. Towards evening the urine was more free and his appetite was better. He had a very restless night, scarcely sleeping at all. On the 13th the patient was very restless. He had a temperature of 98° F.; the urine was passed freely and the motions were normal. The eyes had a glassy appearance with the eyelids somewhat injected. He was pallid but had a fairly good appetite. He had twitchings in the limbs at intervals all day. He slept better at night. On the 14th the same symptoms continued. At 6 P.M. there was a slight rose-coloured rash on the chest and the abdomen. The rash occurred in patches. He slept well. On the 15th the rash was very thick over the chest and the abdomen. At 9 A.M. the child became extremely pallid with feeble pulse. He was ordered brandy, five drops every two hours. He had a second fainting attack about 11 A.M. His temperature was 98°. His appetite was good. He had no more attacks, although he remained very pale all day. At 6 P.M. the rash on the chest and the abdomen was disappearing but a slight rash developed on the back. He slept well. On the 16th the rash was very thick on the back and very slight on the hips, the neck, and the face. The patient was happy and contented. The pallor was still marked. On the 17th the rash was almost gone. The eyelid injection and the glassy appearance of the eyes were rapidly disappearing. The child became convalescent from this date.

For these excellent notes I am indebted to Nurse Adams who watched the little patient most carefully and nursed him with rare skill. The lesson to be drawn from this case is, I think, that in view of the possibility of absorption one should use very much weaker carbolic oil in these cases or substitute some other dressing. I have used the 1 in 20 carbolic oil in a considerable number of cases of circumcision and have never known a case of poisoning before. I shall be interested to hear from other practitioners if they have experienced any trouble of this kind.

Temple Sowerby, Penrith.

TORBAY HOSPITAL.—The Torquay Masonic lodges' concerts, which have been promoted by the mayor on behalf of the Torbay Hospital and Rosehill Children's Hospital, have been the means of raising £63 for those institutions.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

ST. GEORGE'S HOSPITAL.

THREE CASES OF PROSTATECTOMY.

(Under the care of Mr. H. W. ALLINGHAM.)

FOR the notes of the cases we are indebted to Mr. T. Crisp English, surgical registrar.

CASE 1.—The patient, aged 75 years, was admitted into St. George's Hospital on Nov. 16th, 1902, with epididymitis, the result of catheterisation for enlarged prostate. He had had prostatic trouble for about seven years and for the last two years had passed a No. 7 black olivary catheter for himself, using it about three or four times a day and three times at night. There had always been severe pain before catheterisation and also pain after it, with occasional hæmaturia, and the patient was very anxious for any operation that could afford him relief, for "his life during the last two years had been perfect misery." Five weeks before admission there had been acute epididymitis on the right side, which had subsided, and this was followed by similar inflammation on the left side.

On admission the patient was found to be in fair condition and a rectal examination showed marked enlargement of the prostate. He was suffering from a great deal of pain and the catheter when passed was frequently blocked by small clots of blood; a little urine could sometimes be passed without the use of an instrument. A consultation was held and prostatectomy was recommended. This was performed on Nov. 27th by Mr. Allingham. A No. 8 catheter was passed and the bladder was distended with boric lotion. Suprapubic cystotomy was then performed and the enlarged middle lobe of the prostate was found to project prominently into the bladder. Mr. Allingham then proceeded to enucleate the prostate with the right index finger, standing on the patient's left side. After about five minutes' work the whole prostate was removed from the bladder, together with the proximal one and a quarter inches of the urethra which was wide and tortuous. There was very little hæmorrhage and the prostate came away as one piece. A large tube was placed in the suprapubic wound and a No. 8 catheter was tied into the urethra. Progress after the operation was at first very satisfactory, the pain being entirely relieved and small quantities of urine being passed per urethram. On Dec. 20th, however, acute bronchitis developed, with gout in the feet and right shoulder, and death occurred on the 27th.

CASE 2.—A man, aged 64 years, had suffered with increased frequency of micturition for six years. During the last three months there had been increasing difficulty in micturition until ten days before admission when acute retention occurred. Since that time he had only passed drops of urine with great pain. On admission into St. George's Hospital on March 25th, 1903, the patient was catheterised and about two pints of urine were withdrawn. This was alkaline and contained albumin and pus. The prostate was felt projecting into the rectum as a large, rounded, tender tumour. For four weeks he was regularly catheterised and the bladder was washed out. Catheterisation, however, was exceedingly difficult and no improvement in the general condition took place. After a consultation Mr. Allingham performed suprapubic cystotomy on May 2nd and without much difficulty enucleated the whole prostate which weighed one and two-third ounces. There was a well-marked middle lobe which acted as a valve to the urethra. A drainage-tube was placed in the suprapubic wound. On the fourth day after operation the bladder was washed out with boric lotion through a No. 7 catheter, which passed without difficulty, and this process was repeated every morning. Some urine was passed per urethram on the 9th and after this in increasing quantities. The patient got up on the 20th and was discharged on June 6th; the suprapubic wound was then

soundly healed, catheters were no longer used, and the urine was acid and clear, passing freely and with some power.

CASE 3.—A healthy-looking old man, 80 years of age, was admitted into St. George's Hospital on April 30th, 1903, with a portion of a catheter in his bladder. He had had enlarged prostate for 15 years and during that time had regularly passed a No. 7 gum elastic catheter for himself. On the evening of April 29th, whilst the catheter was being withdrawn, a piece about four inches long broke off and was left behind in the bladder; no pain or inconvenience resulted from this accident. On admission the urine was acid and quite clear and per rectum a greatly enlarged prostate was felt; the patient was in vigorous health, being accustomed to walk from ten to 12 miles daily. Mr. Allingham operated on May 2nd. The bladder was first distended with about 30 ounces of boric lotion and was then opened above the pubes. The portion of the catheter which had been broken off was found and removed. The prostate, which was greatly hypertrophied, was then enucleated in two portions with the right index finger, the prostatic urethra being removed at the same time. Hæmorrhage was trifling and a large drainage-tube was inserted into the suprapubic opening. The weight of the prostate was two and three-quarter ounces. The patient was rather drowsy during the week following the operation and there was slight rise of temperature; urine was secreted freely. On the 6th the drainage-tube was removed and the bladder was irrigated daily with boric lotion from this date. On the 11th the stitches were removed, all drowsiness had disappeared, and small quantities of urine were being passed through the urethra, the urine being acid and free from albumin. The patient got up on the 21st and at the present time is progressing excellently.

Remarks by Mr. ALLINGHAM.—These three cases form an interesting contribution to the operative treatment of enlarged prostate. Sufficient experience has now accumulated to show that total extirpation of the gland is undoubtedly the best procedure for those cases in which the symptoms are not controlled by regular catheterisation. The pain and misery which often accompany enlargement of the prostate and the frequent difficulty in the passage of instruments are strong arguments in favour of the radical operation. Other operative measures such as vasectomy have proved to be of little value, whilst partial removal of the gland is not easier than total extirpation and its results have not been nearly so satisfactory. It seems probable, therefore, that complete removal of the gland will become the routine practice for all cases of enlarged prostate in which the symptoms are not readily controlled by palliative measures and for those cases in which the condition is definitely, though perhaps slowly, progressing. The results of this procedure are excellent, in spite of the age of the patients and of serious complications which are frequently present either locally or in other parts of the body. The technique of the operation is sufficiently explained in the description of the cases. In all these patients the entire prostate gland was removed; the hæmorrhage was trifling and very little shock resulted. In Cases 2 and 3 there was complete restoration of function, urine being retained and passed without instrumentation, whilst the pain, insomnia, and other symptoms which had existed before operation were completely relieved. In Case 1, in which death occurred four weeks after operation as the result of bronchitis, the fatal result cannot be attributed to the operation; apart from this complication the patient's progress had been quite satisfactory. Extreme age appears to be no bar to the operation, provided that the patient's general condition is good. Case 3 is an excellent illustration of this point, the patient being 80 years of age.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

Sarcoma of the Pancreas associated with Pseudo-lipæmia.—Experiments on Ankylostoma Larvæ.

A MEETING of this society was held at Guy's Hospital on May 3rd, Dr. A. P. BEDDARD being in the chair.

Dr. J. FAWCETT described a case of Sarcoma of the Pancreas associated with Pseudo-lipæmia. A youth, aged 19 years, was admitted into Guy's Hospital with a severe suppurative gingivitis and he died in 24 hours. At the necropsy a general suppurative peritonitis was found for which no cause could be detected. The pancreas was infiltrated throughout with a white hard growth extending at its tail around the duodenum and into other structures. Many secondary deposits were present in the glands. The histological structure of the growth was that of a lympho-sarcoma but as to whether it originated in the pancreas, the glands, or the duodenum was somewhat doubtful. The case was called sarcoma of the pancreas since the whole organ was involved in the growth. The urine was withdrawn from the bladder after death and contained neither sugar nor diacetic acid.—The blood drawn from the right heart for purposes of bacteriological investigation separated after a short while into an upper milky layer with dark blood below. This blood condition not having been suspected during life the only blood available for further examination was that in the intracranial sinuses. The following report was made by Dr. A. E. Boycott: "The blood separated into a layer of corpuscles (about one-sixth) and a supernatant creamy layer. No change was present in the red corpuscles and there was no excess of leucocytes. The creamy layer owed its colour to a number of extremely minute particles separable with great difficulty from the fluid. They were insoluble in ether or in 1 per cent. acetic acid and on staining gave no indication that they were derived from the cellular elements of the blood." It was found that the blood contained only 0·38 per cent. of fat—i.e., no more than was present in normal plasma. In addition to the interest attaching to the nature of the growth and its situation there was the special feature of the blood condition. So-called "lipæmic" blood was usually of a pinkish colour but the term "lipæmia" had been applied to any blood which after withdrawal separated into layers the upper of which was creamy. A large number of these cases were associated with diabetes, although it had been found in other conditions, such as chronic alcoholism. That it might be due to other causes than free fat had been shown by the late Dr. C. T. Coote[1] and the name of "molecular albumen" was given to it by Dr. Coote, though it was very doubtful whether this substance alone would cause the blood to become "milky." Amongst others, Dr. W. Hale White[2] had recently reported a case in which a so-called "lipæmic" blood owed its milky character to a proteid and another substance which, though allied to fat, was not a true fat. Therefore it was clear that "lipæmia" was not a correct term to use for all cases of "milky" blood. The pathology of the condition was no more clear than it was 40 years ago but fat was not the only cause of it and diabetes was not the only disease with which it was associated. Whether the pancreas had any etiological connexion with it must be left undetermined for the present.

Dr. A. E. BOYCOTT read a paper on Ankylostoma Larvæ. He said that the eggs of ankylostoma required a free supply of oxygen for development. Development did not take place if the eggs were covered with water or were in an atmosphere of hydrogen. If air was bubbled through the water the eggs would hatch. Eggs were killed by immersion in water for ten days and by an atmosphere of hydrogen in 24 hours. The adult larvæ lived in water in the laboratory for several months. In hydrogen at 20° C. they lived for 21 days, in a vacuum for about seven days, and in carbon dioxide for six days. At 37° C., however, they did not live more than four days in hydrogen or carbon dioxide. In the intestine there was very little free gaseous oxygen. Bunge and Weinland had shown that ascaris and other worms could live anaerobically for several days. Analysis of gas collected from the small intestine of cats and rabbits showed that the percentage of oxygen varied from *nil* to about 4. Attempts to induce further development of the extra-corporeal stage of ankylostoma by keeping them with blood, duodenal mucosa, and with deficient oxygen had been uniformly unsuccessful.

LIVERPOOL MEDICAL INSTITUTION.

Strangulated Inguinal Hernia.—Partial Enterocele, Strangulated.—The Treatment when certain Foreign Bodies have been Swallowed.—Digestants.—Interpretation of Physical Signs in Pleural Empyema.

A MEETING of this society was held on April 28th, Dr. JAMES BARR, the President, being in the chair.

Mr. K. W. MONSARRAT related a case of Strangulated Inguinal Hernia with an unusual complication. The patient

[1] THE LANCET, Sept. 8th, 1860, p. 232.
[2] THE LANCET, Oct. 10th, 1903, p. 1001.

was a man, aged 45 years, and the hernia was operated upon 24 hours after the onset of the symptoms of strangulation. The gut was intensely congested but except for a greyish purple patch on the entering coil at the neck of the sac it did not show evidence of marked damage. At the end of the following week the patient complained of vague general abdominal pain and this was accompanied by evening pyrexia. The pain became localised to the right iliac fossa and during the seventh week after operation symptoms of chronic intestinal obstruction commenced. The abdomen was opened in the right iliac region and a mass of coiled small intestine was found bound to the parietal peritoneum by a dense adhesion and there were numerous other adhesions between the coils, one of which was causing a definite compression. The adhesions were divided, the omentum was used to cover some of the raw surface, and the abdomen was closed. This operation was followed by subsidence of all morbid symptoms.

Mr. T. C. LITLER JONES related a case of Richter's Hernia in a woman, 73 years of age, who was admitted into the Liverpool Royal Infirmary with a history of four days' pain and abdominal discomfort with slight distension and a small lump in the right femoral region. There was no constipation or vomiting, neither was there a history of hernia. A strangulated femoral hernia being diagnosed, operation was proceeded with. The gut was adherent to the sac which contained foul-smelling fluid; the protrusion was of about the size of a half-inch marble, of an ashy grey colour, too far gone for recovery. The constriction being divided, the gut was gently pulled down and the diverticulum was invaginated into the lumen of the bowel. Lembert's sutures of fine silk were used to secure the peritoneum. The sac was removed, the wound was washed with an antiseptic, a small drain was used, deep sutures to attempt a radical cure were now inserted, and the patient was put back to bed. An uninterrupted recovery followed, the patient leaving the hospital in the fifth week. This was the second case that had come under his care, the other requiring enterectomy and being in the inguinal region. The bud-like process in the latter case was about half the lumen of the bowel; 14 inches were removed. The patient was a man, aged 48 years, and also made a good recovery.

Dr. W. BLAIR BELL read a note on a method of treatment which he had adopted in two cases in which children, aged 18 months and four and a half years, had swallowed foreign bodies—the one a brooch and the other a bed-knob. He had given the children absorbent cotton-wool teased finely in their food. The result had been extremely satisfactory in each case, the swallowed body being passed in at most 18 hours enveloped in the wool.—In reply to Mr. LITLER JONES Dr. BELL said that so far as he knew the method was a new one and that he could find no record of similar treatment, although "hair" had been recommended since it had a faculty for forming hair-balls.

Dr. CARTER read a note on Digestants and related a number of experiments illustrating the relative values of recent and old pepsin and of papain as digestants of proteids. He also mentioned other experiments showing the influence of antiseptics on both peptic and pancreatic digestion and the contrast between oxidising antiseptics and others. Lastly, he pointed out that the bacillus typhosus did not influence digestion and though, as a rule, antiseptics had no restraining influence on the bacillus, yet peroxide of hydrogen, lysol, and formalin in such degrees of dilution as admitted of their administration internally had a marked effect, both inhibiting the growth of, and killing, the bacillus.

Dr. R. J. M. BUCHANAN read a paper on the Interpretation of Physical Signs in Pleural Empyema. He drew attention to the frequent occurrence in cases of pleural effusion of auscultatory signs the same as those obtaining over solid lung. He considered Baccelli's sign untrustworthy as a distinction between serous and purulent effusions. The auscultatory signs over purulent effusion resembled, in his experience, those over consolidated lung more than those over serous effusion and he offered an explanation in support of his view, based upon a series of illustrative cases. He was of opinion that serous effusion exercised a selective rather than a wholly inhibitive influence over the transmission of vocal vibrations. He pointed out the danger of errors in diagnosis in cases of the "acute pneumonic type" of pleuritis and the probability that in such cases purulent effusion might be present from the onset. In concluding Dr. Buchanan emphasised the necessity for a more careful study and interpretation of the physical signs so as to establish strong grounds in practice for advocating exploratory puncture.—Dr. A. G. GULLAN mentioned a case in which the vocal fremitus, breath sounds, and vocal resonance were transmitted through a purulent effusion. The patient was a man, aged about 40 years, who was supposed to have a thickened pleura, as he had a previous history of pleurisy on the affected side. His temperature, night sweats, and general appearance were considered by the physician in charge to be due to large tuberculous cavities which existed at both apices. After death, however, the upper parts of the lungs were affected by marked tuberculosis but pus was found in the pleural cavity.—Dr. T. R. GLYNN mentioned the importance of the obliquity of the line of dulness in pneumonia when the patient was sitting up. He said that in some cases, though the clinical symptoms pointed to a large effusion being present, only a small quantity of fluid could be drawn off, the excessive dulness being due to concurrent pneumonia.—Dr. W. B. WARRINGTON said he thought the existence of bronchial breathing was independent of the nature of the material conducting the glottic sound and was observed equally whether the fluid was serous or purulent. He considered the chief difficulty was to explain the existence of bronchial breathing in some cases of pleural effusion and in others the diminution of all the normal auscultatory phenomena.—Dr. HUBERT ARMSTRONG remarked that empyema, like enteric fever, was a disease which occurred with greatest frequency in children and yet was generally discussed in the aspects which it presented in adults. A most important point in the diagnosis was the altered position of the apex beat. This and the extreme dulness with distinctive resistance on percussion were the signs on which he placed most reliance, but when in doubt he never hesitated to explore, using a large needle.—Dr. E. T. DAVIES said that in his experience the most trustworthy sign of pleural effusion was the absence of vocal fremitus, but the only certain evidence of pleural effusion was obtained by the use of the exploring needle.—The following gentlemen also took part in the discussion: Dr. NATHAN RAW, Mr. LITLER JONES, Dr. JOHN HAY, Dr. J. HILL ABRAM, and Dr. J. LLOYD ROBERTS.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held at Manchester on April 15th, Dr. W. J. Sinclair (Manchester), the President, being in the chair.—The meeting was devoted to a discussion on Abortion. Dr. W. E. Fothergill (Manchester) brought forward some points regarding the Pathology of "Habitual" and Incomplete Abortion. "Habitual" abortion was defined as a term applied to the consecutive occurrence of from three to five abortions in the same patient without any sign of syphilis. He had examined a large number of specimens from such cases and had found that there was constantly present thrombosis of the intervillous spaces to an extent sufficient to cause death of the ovum. Regarding the use of chlorate of potassium in such cases, he asked whether the drug diminished the coagulability of the blood. Speaking on incomplete abortion with reference to the fate of portions of ovuline tissue left in the uterus in non-septic cases, he said that, of course, in many instances breaking down and discharge of the tissue occurred but in others he suggested that the decidual cell acted in some degree as a phagocyte, eating up the ovuline tissues. He further suggested, on the ground of microscopical observation, that the decidual cell was an active phagocyte with the function of repelling invasion by chorionic villi. When the decidual cells failed to check the activity of the fœtal villous growth deciduoma malignum might result.—Dr. J. B. Hellier (Leeds) introduced the Medical Indications for Induction. To establish an imperative indication, the patient's life must be seriously threatened and the operation must be likely to do good. In advanced cardiac disease induction in the early months of pregnancy was hardly ever the correct treatment and strong reasons were adduced against the performance of the operation in cases of pulmonary tuberculosis and of insanity. On the other hand, Dr. Hellier recognised its value in three classes of diseases: 1. Hyperemesis gravidarum of the "pernicious" kind, in which early induction was necessary to obtain a successful result. A pulse of 120 implied a serious condition; one of from 130 to 140 meant a doubtful prognosis in any case. Women who before conception had had symptoms of gastric ulcer, although the symptoms might have ceased for some

time, were liable to suffer severely from vomiting in pregnancy. 2. Certain cases of chorea gravidarum in which serious nervous and constitutional symptoms appeared. 3. Cases of albuminuria and anasarca due to nephritis. When the toxæmia was due to the pregnant state the termination of the latter led to cessation of the production of the toxic material. But this effect was not instantaneous, time was required before improvement could be obtained, and therefore induction must not be delayed too long.—Dr. J. E. Gemmell (Liverpool) brought forward the Methods of Induction. Bearing in mind the hæmorrhage and sepsis arising from incomplete natural abortion, the method chosen should be that in which these complications were best guarded against. The time selected should therefore be before the end of the fourth month; the method, that of dilatation by means of Hegar's dilators, curettage, and gauze packing, after the same preparations and under the same conditions that were usual in any other surgical operation by the vaginal route. By this method the whole field of operation was under control from beginning to end; the difficulty of extraction of the fœtus was overcome by the use of ovum forceps, or if necessary by removing the fœtus piecemeal. Dr. Gemmell's experience was of six cases in 18 years: 1. At the third month: use of sponge tents, finger and ovum forceps. 2. At third month: gum elastic bougie and gauze packing of the vagina; expulsion in 24 hours; sequelæ: pelvic cellulitis and abscess. 3. At the third month, for cancer of the cervix: bougie, expelled in 24 hours; the introduction of a second was followed by expulsion of the ovum 48 hours later. 4. At the second month: for hæmophilia which had led to nearly fatal post-partum hæmorrhage at each of three previous labours; passage of the sound and separation of the membranes; expulsion at the end of 36 hours. 5 and 6. Dilatation and curettage at one sitting. If pregnancy be allowed to advance to the fifth month induction was of doubtful value to the patient. If it be necessary the method of dilatation followed by gauze packing or the smaller Champetier de Ribes's bag was the safest line of treatment.—Dr. W. Walter (Manchester) introduced the Treatment of Incomplete Abortion, dealing with both the non-septic and septic states.—Dr. W. Macfie Campbell (Liverpool) introduced the Treatment of Abortion. After briefly reviewing the prophylactic measures Dr. Campbell said that the treatment of threatened abortion was simple and unsatisfactory, although he had occasionally been surprised by the good results from ergot which had been given to empty the uterus. With inevitable abortion arose the question as to whether treatment should be expectant or active. The first required time, carried a constantly increasing risk of sepsis, and had depressing effects upon the patient's mental state. There were also the possibilities of retention of portions of placental tissue and the need for subsequent interference. In active treatment, if tamponnement of the vagina did not lead to the emptying of the uterus, he preferred dilatation followed by digital or instrumental clearing out. He had found digital removal a difficult procedure unless the ovum was almost extruded and therefore he preferred to use the ovum forceps. With care and gentleness the pain was trifling and extraction was generally easy. If the finger discovered some attached tissues he employed Donald's flushing curette. Bleeding sometimes went on after removal or curetting and it was then necessary to pack the uterine cavity.—Dr. D. Lloyd Roberts (Manchester) held that "habitual" abortion was due to syphilis. He advocated early abortion in cases of serious cardiac disease, in nephritis, and especially in hyperemesis in which he had never regretted the performance of the operation.—Dr. A. Donald (Manchester) considered induction to be justifiable in cases of moral insanity. He carried out the induction at one sitting, dilating up to No. 16 (Matthews Duncan) and then using the flushing curette. Recovery followed without a bad symptom.—Dr. J. M. H. Martin (Blackburn) thought that "habitual" abortion was due chiefly to malpositions of the uterus or to neurotic conditions. In hyperemesis it was absolutely wrong to abstain from intervention.—Dr. E. O. Croft (Leeds) took a middle position in regard to induction. He advocated preliminary treatment by instrumental separation of the ovum or by packing the cervix with gauze. As a result the cervix became softer and was more easily dilated subsequently. Surgical methods, he thought, were advisable only in urgent cases.—Dr. E. T. Davies (Liverpool) supported Dr. Donald's remarks anent moral insanity on the ground of a similar case in his practice.

GLASGOW OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.—A meeting of this society was held on April 27th, Dr. J. Nigel Stark, the President, being in the chair.—Dr. Robert Jardine read notes of a case of Recurring Eclampsia. The history of the first attack was as follows. A married woman, aged 30 years, a quartipara, was admitted into hospital under Dr. M. Black's care on April 23rd, 1903. She was believed to be eight months pregnant. She had three fits before admission and was unconscious when admitted. There was slight œdema of her hands and feet and her urine was loaded with albumin. Under treatment she regained consciousness on April 26th and was delivered by natural efforts on the following day of a dead child. There was still a trace of albumin in the urine when she left the hospital. On Dec. 3rd the patient was again admitted to the hospital in a semi-comatose condition with a history of convulsions which had continued for 12 hours. The urine was found to contain a large quantity of albumin with granular and hyaline casts and degenerated blood cells. Saline solution was injected subcutaneously. The os uteri was dilated with Bossi's dilator and a live child was delivered with forceps. The tube casts disappeared but there was still a trace of albumin when the patient left the hospital.—Dr. Jardine also read notes of a case of Hydrocephalus with Post-partum Hæmorrhage. The patient, who was a married woman, a bipara, was admitted to hospital on Oct. 12th, 1902, after two attempts had been made to deliver her with forceps outside. The uterus was firmly moulded round the child but there was no special thinning of the lower uterine segment. The uterus was in a state of continuous tonic contraction. The large head could be felt to crackle under the fingers. Dr. Jardine perforated and delivered by means of a cranioclast. As profuse hæmorrhage came on he cleared out the placenta and compressed the uterus bimanually. An intra-uterine douche at 120° F. was given, followed by a solution of suprarenal gland, 30 grains to the pint. As the uterus still remained uncontracted it was plugged with iodoform gauze.—Dr. J. K. Kelly read notes of two cases of Primary Carcinoma of the Ovary. In each both ovaries were affected. One patient was married and 45 years of age and the other was unmarried and 30 years of age.—Dr. Peter McBryde showed a Long Feather which was discharged from a labial abscess in a girl, aged 15 years.—Dr. S. J. Cameron showed a case of Spina Bifida in which operation was performed on the day of birth. The skin over the tumour had been injured during parturition and showed a tendency to slough a few hours after birth.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on April 19th, Dr. H. Angus, the President, being in the chair.—Mr. Vaughan Bateson gave an address on Medical Customs of the Tibetans, which was illustrated by photographs and specimens of charms, &c. He said that the medical men were priests and that drugs were very little used in the treatment of disease but that they relied chiefly on charms. These were in some cases objects of the nature of jewellery or in others inscriptions on paper which were worn on the person, different inscriptions being used according to the object desired. Other remedial measures were bathing in waters which at certain times were supposed to possess healing virtues, and the use of musical instruments, drums and trumpets. Surgical measures were apparently never undertaken among the Tibetans. In cases of snake-bite pieces of sandstone were applied to suck away the poison. Syphilis, at least in the familiar form, was rare. Leprosy was common, as was apoplexy. The methods of disposing of the dead were described. Cremation was practised in the case of persons of peculiar sanctity but was rare owing to the scarcity of fuel. The most common practice was to expose the body to be eaten by vultures and wild animals. Bodies were also put into the water sometimes.—Questions were asked by Dr. D. Goyder, Dr. H. J. Campbell, Dr. W. A. Evans, and Dr. S. Johnston, and Mr. Bateson replied.

ASSOCIATION OF ASYLUM WORKERS.—The annual meeting of this association will be held at the Medical Society's House, 11, Chandos-street, Cavendish-square, London, W., on Tuesday, May 17th, at 4 P.M., when Sir James Crichton-Browne (President of the association) will be in the chair. All interested in asylum work and workers are cordially invited to attend.

Reviews and Notices of Books.

Nothnagel's Encyclopædia of Practical Medicine: Diseases of the Liver, Pancreas, and Suprarenal Capsules. By LEOPOLD OSER, M.D., EDMUND NEUSSER, M.D., HEINRICH QUINCKE, M.D., and G. HOPPE-SEYLER, M.D. Authorised translation from the German. Edited, with additions, by REGINALD H. FITZ, M.D., and FREDERICK A. PACKARD, M.D. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 918. Price, cloth 21*s.* net; half morocco, 25*s.* net.

THIS volume forms an excellent work of reference on diseases of the organs dealt with and especially from the pathological and clinical standpoints. The first section deals with Diseases of the Pancreas and comprises some 300 pages of which over 30 are devoted to a very complete bibliography of the subject. It is the work of Dr. L. Oser of Vienna and is prefaced by a short article on the anatomy of the pancreas by Professor Emil Zuckerkandl and one on the physiology of the organ by Dr. Katz who is also responsible with Dr. Oser for many of the experimental researches of which protocols are given in the text. A critical statement and exhaustive discussion of the general pathology, symptomatology, and treatment of pancreatic diseases follow. The groups of symptoms found in pancreatic diseases in general are most carefully recorded and impartially considered with reference to their significance and value in diagnosis. These symptoms Dr. Oser divides into three groups: the first, those directly referable to the impaired action of the pancreas, comprising glycosuria, diabetes, fatty stools, and faulty digestion of proteids; the second includes symptoms which are in many cases suggestive but by no means pathognomonic, such as urinary changes other than glycosuria, sialorrhœa pancreatica, an early and rapidly advancing cachexia, and the so-called bronzed diabetes; and the third group comprises symptoms which do not by themselves suggest pancreatic involvement—namely, jaundice, pain, and dyspeptic symptoms. The remainder of the section is devoted to the separate consideration of the individual diseases of the pancreas. Among these we may mention as very excellent and complete the accounts given of the various forms of pancreatitis and the relation of hæmorrhagic processes to them, of cysts and cancer of the pancreas, and the discussion of the nature and origin of fat necrosis. A commendable feature is the frankness with which Dr. Oser points out the incomplete character of our present knowledge of many matters concerned and the difficulty, in some cases the impossibility, of forming a diagnosis with the means at our disposal, while his plea for careful observation and record of cases of pancreatic disease in general we can heartily endorse. It is also gratifying to recognise that the labours of English and American workers on the subject are duly recognised. Dr. Fitz, the editor of this section, whose own work on pancreatic disease is so well known, has added many editorial notes of great value, bringing the work more up to date, although, of course, many advances have been made since the publication, notably the recent work of Mr. A. W. Mayo Robson and Dr. P. J. Cammidge (THE LANCET, March 19th, 1904, pp. 773, 782, &c.).

The second section deals with Diseases of the Suprarenal Capsules and is the work of Dr. Edmund Neusser of Vienna. Its general plan is similar to that of the preceding section, though as a whole it is less critical and less well arranged, and it is considerably improved by the additions of the editor, Dr. Fitz, notably in the case of the therapeutical uses of suprarenal extract. The account of Addison's disease is, however, a valuable and exhaustive review of our knowledge of it. Dr. Neusser endeavours to combine the internal secretion and the auto-intoxication theories of the function of the suprarenals; the pigmentation in Addison's disease he regards as a secondary phenomenon not dependent on the capsular disease but on the associated involvement of the abdominal sympathetic system.

The third section, that dealing with Diseases of the Liver, occupies more than half of the book. It is the joint work of Dr. Quincke and Dr. Hoppe-Seyler of Kiel and like the other two sections begins with an anatomical and physiological introduction followed by a general account of the pathology and symptoms of hepatic disease, after which the individual diseases are considered separately. The bibliography here, however, is given for each disease and not collectively at the end of the section. The general accounts are, of course, of a less controversial character than in the previous sections and are almost without exception clear and critical. In the section on cholelithiasis great stress is laid on the rôle of micro-organisms and the catarrhal processes produced by them in the genesis of gall-stones. In that on cirrhosis the author (Dr. Quincke) perhaps hardly does justice to the work of English observers, while the account of malignant disease of the liver is not quite so clear as could be wished. Hydatid disease is very carefully described and an excellent discussion of the nature of multilocular or alveolar hydatid disease is appended to it. This section was edited by Dr. Frederick A. Packard whose untimely death is deplored by the general editor, Dr. Alfred Stengel, in his preface.

Annual Report of the Public Health of Gibraltar for the Year 1903. By W. H. HORROCKS, M.B., B.Sc. Lond., D.P.H. R.C.P.S. Eng., Major, R.A.M.C., M.O.H. Gibraltar: Garrison Library Printing Establishment. 1904. Pp. 22.

Major Horrocks points out that in order to compare the death-rate of Gibraltar with the death-rates shown in the Registrar-General's latest return it is necessary to calculate a "standard death-rate." The population of Gibraltar, as compared with that of England and Wales, has a proportionately small number living at the ages of high mortality and a proportionately large number at the ages of low mortality. Consequently, the general death-rate as recorded is too favourable and must be corrected for age and sex distribution in order to make it comparable with the corrected death-rates given by the Registrar-General. The general death-rate of 17·62 per 1000 is low, the mortality being highest in the first quarter and lowest in the third quarter of the year. The infantile mortality of 179·6 per 1000 is very high and considerably above the average, the high rate being due to a large number of deaths from bronchitis and broncho-pneumonia. Among the diseases causing mortality enteric fever proved fatal in five out of 20 reported cases. The principal zymotic diseases caused 49 deaths, equivalent to a zymotic mortality of 2·11 per 1000 of the total civil population. There were 31 deaths from tuberculous diseases, equivalent to a death-rate of 1·52 per 1000 of the total civil population. Major Horrocks details the administrative measures which are necessary in the struggle against tuberculosis. He writes that the general sanitary condition of Gibraltar is satisfactory taking into consideration the overcrowding of individuals in houses and the aggregation of houses on areas which characterises the town. House-to-house inspection continues and month by month insanitary houses are brought into line with modern requirements. The by-laws as to drains and sanitary fittings require to be brought up to the standard. The supply of drinking water has been a source of anxiety owing to the deficient rainfall. During the year a collecting area of ten acres has been provided on the sand slopes above Catalan Bay. This area is capable of yielding 240,000 gallons per inch of rainfall. The sand has been covered with corrugated iron sheets laid on creasoted timber framing. The water from the area is collected in a channel at the bottom of the slope and is conveyed to four reservoirs.

A collecting area of 37 acres is projected and an increase to the reservoirs which will allow of a pipe supply to individual houses. At present the distribution of drinking water by butts and barrels is mainly in the hands of private individuals. A scheme has been elaborated by which all butts and barrels are sterilised by steam once a week. Should an epidemic of enteric fever or cholera occur it will be feasible to sterilise all the butts and barrels once a day. The bacteriological laboratory has been completely equipped and it is now possible to make a systematic biological examination of the public water-supplies. The supply of sanitary water to the high-level districts near Moorish Castle has been improved by the construction of a high-level reservoir. The ventilation of the main sewers, a matter of great difficulty, is under consideration. For the removal of refuse the commissioners have decided to replace the straw baskets by covered galvanised-iron receptacles. It is hoped that the sanitary commissioners will soon be able to erect one of the new destructors at the North Front. All infected articles of clothing and bedding have been satisfactorily disinfected in the Washington Lyon disinfecting apparatus. The dairies and cowsheds in the town are not satisfactory. Major Horrocks is anxious that the Dairies, Cowsheds, and Milkshops Orders of the Local Government Board shall be made to apply to Gibraltar. Constant supervision has been exercised over the food-supplies sold in the town. The report is evidently one of sterling work.

Manual of Pathology. By JOSEPH COATS, M.D. Glasg., late Professor of Pathology in the University of Glasgow. Fifth Edition, revised throughout by L. R. SUTHERLAND, M.B. Glasg., Professor of Pathology in the University of St. Andrews. With 729 illustrations and two coloured plates. London, New York, and Bombay: Longmans, Green, and Co. 1903. Pp. 1287. Price 28*s.*

IN reviewing a text-book so well known as "A Manual of Pathology" by the late Dr. Coats no words are required to explain the scope and character of the publication. The fifth edition has been admirably revised throughout by Professor Sutherland and the work may be regarded as one of the best treatises on the subject of pathology. The requirements of the student have been kept prominently in view and the whole manner in which the manual is written is particularly adapted to the purpose of conveying a sound knowledge of pathological processes; at the same time the practitioner will find the work a valuable one for reference.

Much interesting material is contained in the first section of Part I., headed Nature, Causation, and Terminations of Disease in General. The chapter on bacteriology has been omitted, as Professor Sutherland rightly considers that this subject is now one which can only be adequately dealt with in special works. The etiological connexion of bacteria with disease is, however, referred to and we are glad to find that due emphasis is laid on the variation of the powers of resistance to the inroads of pathogenic organisms on the part of the tissues as being an important element in the causation of pathological conditions. With the advance of knowledge in bacteriology there has been a great tendency to magnify the powers of the seed and to forget the influence of the soil. The actual etiology of particular forms of disease is in many cases obscure because of the limitations of medical knowledge. The most obvious manner in which morbid changes may be set up is by the direct interference of forces external to the body but equally important is a pre-existing condition which renders certain structures more liable to interference than others. This pre-existing state may be inherent in the actual structure of the part or it may be an acquired peculiarity, and this "susceptibility" or "predisposition" cannot be too strongly impressed upon the student when studying pathogenic factors. In this connexion the remarks on exposure to cold are interesting. It is pointed out that exposure can scarcely be the direct cause of disease as it produces in different persons most diverse results. It is probable, however, that the effect of the exposure is, by reflex nervous influences, to render some part unduly susceptible to the exciting cause of disease, the locality which is thus rendered susceptible being determined often by the individual characteristics of the person attacked.

In our review of the previous edition[1] we drew attention to the brevity with which the developments of hæmatology were considered. In the present edition this defect has been fully remedied and a good account is given of the Alterations of the Blood and its Constituents. The description of the various forms of leucocytes is particularly lucid and the introduction of two coloured plates considerably adds to the value of the letterpress. The condition of leukæmia receives due attention and the various tissue changes found in connexion with the disease are carefully noted. The microscopic changes occurring in the blood in cases of malaria are also described and directions are given as to the technique employed in the examination of the blood for the hæmatozoon.

The method in which the pathology of the various systems and organs of the body is discussed deserves high praise. A noteworthy feature of the book is its thoroughness; there is no "padding" with unnecessary details of conflicting theories, yet nothing that is of importance seems to be omitted. Some text-books on pathology are only guides to morbid anatomy but Dr. Coats's manual is not so limited. Not only are the structural alterations brought about by disease described but the essential nature and (so far as present knowledge permits) the individual causes of morbid processes are minutely investigated. The student is thus introduced to the scientific study of disease in as broad a sense as possible and the knowledge so attained will be of incalculable value to him subsequently when engaged in the actual practice of his profession. The book is well illustrated and the fact that in this edition the number of illustrations has been increased from 490 to 729 is proof of the complete manner in which the work has been revised.

The Prevention of Consumption. By ALFRED P. HILLIER, M.D. Edin., Secretary to the National Association for the Prevention of Tuberculosis. London: Longmans, Green, and Co. 1903. Pp. 225. Price 5*s.* net.

THIS little book, which comprises 157 pages of large text together with illustrations and an appendix of 68 pages embracing reprints of articles by the author and others, forms yet another addition to the already numerous books and pamphlets upon the same subject. In this instance the book has had the advantage of being revised by Professor Koch and the eminent pathologist writes a few introductory remarks in which he commends the efforts of the author. Dr. Hillier has certainly been at pains to collect much heterogeneous material relative to the subject of which he treats, embodying as it does comments upon the attitude of the antivivisectionists and upon the influence of pulmonary tuberculosis upon art. The book is written at a higher level than any of the previous efforts of the author with which we are acquainted and there are indications that the reviser has modified or restrained some of Dr. Hillier's former views which were perhaps a little extravagant. One effect of this editing has been, in a sense, to enhance the value of the book but it has also introduced something like a dual authorship which rather complicates the professedly popular character of the volume. We find,

[1] THE LANCET, August 11th, 1900, p. 403.

for instance, that in one place the author is seeking to explain the meaning of certain recent scientific work not easily comprehended by the layman while on another page there is the homely injunction—in big print, too—"Do not spit on the floor." In explaining the nature of the disease too much space is devoted to the opinions of the ancients and too little, relatively, to modern ideas. As a popular exposition we cannot say that this little volume compares altogether favourably with Dr. S. A. Knopf's "Tuberculosis as a Disease of the Masses and how to Combat it," a popular essay which in 1901 was awarded the prize offered by the International Congress on Tuberculosis which met at Berlin in 1899. But notwithstanding this a discriminating public will derive much useful information from Dr. Hillier's book. We say "discriminating" because in some places the author has not always succeeded in conveying the meaning which we imagine that he intended to convey. For instance, his remarks on compulsory notification in Sheffield leave the impression upon the reader that the local Act subjects tuberculous persons to the same penalties as regards exposure and the like as is the case with acute infectious diseases, but this is not so. So, too, with respect to prevention, the statement that "measures which count on general hygiene alone are feeble and futile" is an unfortunate one, seeing that these very measures have apparently been responsible for the enormous decline which has taken place in the disease. Certain special measures are doubtless desirable but we shall do well to resist any neglect of "general hygiene." We are glad to see that Dr. Hillier accepts the view for which we have constantly contended in our columns—i.e., that the infectivity of pulmonary tuberculosis is "undoubtedly low"—but we do not quite follow his meaning when he says that having regard to the long period during which infection may last "this low infectivity is enough under certain circumstances to hand on infection from one case to at least one or two more and thus keep our tuberculosis death-rate as it is to-day." The "certain circumstances" do not obviously obtain generally as the disease continues steadily to diminish. Another instance of over-statement occurs on p. 156, where the author remarks that "the man sent home on a sick allowance and a weekly bottle of medicine from some dispensary to spit on the hearth and cough his time away amidst the family is doomed himself and will probably infect others." Surely this should read *may possibly infect others*. If, as is by no means unlikely, a second edition of this little book is called for, Dr. Hillier will do well to modify some of the passages to which we have referred, and he might, too, with advantage devote a little more space to the results of open-air treatment. A few remarks on the possible fallacies of the statistics relating to sanatoriums would be useful, as the assumption underlying these figures that had the patients not entered the sanatoriums they would either have died or have become worse is, of course, largely gratuitous. When maps or charts relative to the distribution of pulmonary tuberculosis are furnished the author should state the year or the periods to which they relate and care should be taken to ascertain that the term "tuberculosis" has the same meaning wherever the figures relating to it are compared.

The Bombay Medical and Physical Society. Vol. VII., No. 1. January, 1904. Bombay: Printed at the Times Press. 1904. Pp. 37.

AT the annual meeting of this society the report for the preceding year was read and was followed by three papers—the first, by Lieutenant-Colonel H. P. Dimmock, I.M.S., on Trypanosomiasis, in which he drew attention to "epidemic dropsy" which particularly requires investigation; the second, by Lieutenant-Colonel Collie, I.M.S., Notes on a Few Selected Operation Cases at the Petit Hospital; and the third, by Captain E. F. Gordon Tucker, I.M.S., on Plague, a Soil Infection. Colonel Collie's operation cases are of considerable clinical interest; they are cases of "pyosalpingo-cophoritis," of "ovarian cyst with twisted pedicle," and of "enlarged spleen, much elongated pedicle allowing the spleen to occupy the right side of the abdomen; acute symptoms from twisted pedicle." In this case the abdomen was occupied by a large hard tumour on the right side extending from Poupart's ligament to the costal arch but separable from the liver. The tumour extended about two inches to the left of the middle line between the umbilicus and the pubes and on the right side into the lumbar region where its outline could be distinctly felt. It was hard, smooth, and mobile; the contour towards the middle line was well defined and presented a slight depression opposite the umbilicus. On percussion over the splenic region an area of dulness could be marked out as large as is often found with a normal spleen and on deep palpation it appeared that the spleen could be felt in its normal position. Though the tumour "felt like an enlarged spleen on the wrong side of the body," the diagnosis made lay between a sarcoma of the ovary with a twisted pedicle and a renal tumour. At the operation a large dark slate-coloured, apparently solid, tumour was found occupying the whole right side of the abdomen; it appeared at first sight to be fixed to the spine, but on raising the tumour the pedicle was found to extend as a broad twisted band into the splenic region. It was this broad band which was taken for the spleen; the tumour was the spleen displaced. On examining the pedicle a double twist was observed and in order to undo this the spleen had to be lifted out of the abdomen. Before closing the abdomen the colour of the spleen had markedly improved and its consistence was softer. The patient recovered and, when the dressings were removed, the spleen was found adherent to the abdominal wound and diminished to a sixth of its former size. The history of the case is most instructive.

Captain Tucker's paper is worth study. He dwells on the circumstance that we know little or nothing of the characteristics of the "bacillus pestis" as a saprophyte in nature. He writes: "We wish to know whether the involution forms which we can produce by methods which only in a very inadequate manner mimic the conditions under which the bacillus may flourish in external nature represent forms under which the bacillus may remain latent or non-virulent for long periods in houses, clothing, some host other than man and rodents, or the soil. Or, if it be demonstrated that in a town which has suffered from one epidemic and has remained quite free for months but again becomes the seat of the pestilence, evidence of definite infection through some imported case is always forthcoming, and that there is no such thing as plague reappearing spontaneously in a previously infected district under seasonal or other variations, then the question arises, What are the peculiar local conditions which favour the occurrence of an epidemic after definite periods of quiescence or at definite seasons of the year in a particular locality?" The problem before us is to attempt to find out the position and condition of the plague bacillus in nature during the latter portion of the "period of quiescence," when it is probable, though not proved, that it exists in the state of a facultative saprophyte. Should it be ultimately proved, as Captain Tucker ventures to think that it will be, that the plague bacillus exists as a saprophyte in the soil, it will have the result of impressing on the public that the one and only way of dealing with the problem is partial evacuation carried out on scientific lines, an evacuation of houses rigorously maintained for eight weeks against all and any who refuse to avail themselves of the protection provided for them by the Government through inoculation.

LIBRARY TABLE.

Short Talks with Young Mothers. By CHARLES GILMORE KERLEY, M.D. London and New York: G. P. Putnam's Sons, The Knickerbocker Press. 1901. Pp. 262. Price 5*s.*—We have read this little book with considerable interest. It is full of practical suggestions and has evidently been written by a man who has had wide personal experience in the management of the nursery. It is singularly free from all theoretical bias. Dr. Kerley has many interesting observations to make on the subject of habits and with reference to the question of capricious appetite—one of the commonest and most objectionable habits incidental to childhood—he recommends an original line of treatment which he claims to be followed by very excellent results. Habits of appetite, like other bad habits, are very easily engendered in young children by carelessness on the part of the nurse, and when once acquired they can only be removed by systematic attention. Habits of bed-wetting, masturbation, nail-biting, and thumb-sucking are particularly liable to manifest themselves in degenerate children born of neurotic parents and they are particularly difficult to cure. Every word that Dr. Kerley has to say on the subject of these habits is worth attention and is useful not only for mothers but for practitioners also who are frequently consulted on these matters. The directions for the feeding of infants and young children are very simple and in accordance with the best modern principles. For infants graduated mixtures prepared by the combination of gravity cream, pure milk, sugar and water are recommended. By the use of the formulæ which the author supplies an accurate percentage modification is secured without any mechanical and chemical interference with the natural properties of milk. With regard to the preservation of the milk the author is in favour of pasteurisation as opposed to sterilisation. We highly commend the diet schedules which are drawn up for children from one year to six years of age. Two points which we consider of very great importance have evidently been carefully borne in mind in drawing up these dietaries. One of them is that the diet should be thoroughly representative, varied and free from monotony, and secondly, that an adequate supply of nitrogenous food apart from butcher's meat should be provided for the requirements of tissue growth. We consider these dietaries, if intelligently modified to meet the requirements of personal idiosyncrasies and individual peculiarities of digestion, will prove of the greatest use to those who are called upon to arrange a child's diet. It is impossible in a short space to do justice to the excellence and originality of this little book. We can only advise all those who are interested in the study and rearing of children to read what Dr. Kerley modestly describes as "Short Talks with Young Mothers."

The Meal Poke, University of St. Andrews, University College, Dundee. Edited by B. BELLYSE BAILDON, M.A., Ph.D., and R. COCHRANE BUIST, M.A. St. And., M.D. Edin., for the Committee of the Students' Union Bazaar. Dundee: James P. Mathew and Co. 1903. Pp. 112.—This is a book apparently written for a bazaar. It does not possess a formal prose introduction but possibly the first verse of the opening poem may serve in some measure to suggest at least the origin of the title:—

> "The meal-pokes, the meal-pokes,
> The sonsie, gancie meal-poke,
> Baith rich and puir are fain to gi'
> To ony students' meal-poke."

Amongst the contributors to the volume are Dr. Bellyse Baildon (the author of the prefatory verses), Dr. Arthur Balfour, Dr. R. Cochrane Buist, Dr. J. M. Barrie (who is not at his best), and Dr. Andrew Lang, whose playful humour finds a suitable outlet in his article on Andreapolis. The book contains a number of illustrations and two pieces of music, of which one, entitled the "Pawkie Duke," is stated to be "a Scottish national song for the guidance of Englishmen and other foreigners."

Mechanical Vibratory Stimulation, its Theory and Application in the Treatment of Disease. By MAURICE F. PILGRIM, M.D., First Vice-President of the American Electro-therapeutic Association, Professor of Psychiatry in the New York School of Physical Therapeutics, Editor of Department of Psychiatry in the *Journal of Advanced Therapeutics.* New York: The Lawrence Press. Pp. 152.—Dr. Maurice F. Pilgrim teaches that mechanical vibratory stimulation increases the volume of the blood and lymph flow, increases nutrition, improves the respiratory process, stimulates secretion, improves muscular metabolism, stimulates the excretory organs, relieves congestion, and inhibits pain. The great remedy, however, must be properly employed and the book is written to show how this may best be accomplished.

Burdett's Hospitals and Charities, 1904. By Sir HENRY BURDETT, K.C.B. London: The Scientific Press. Pp. 1032. Price 5*s.* net.—This useful compilation is larger by some 12 pages than the issue for 1903. Seven pages of this increase are due to an increase in the introductory matter, this again being probably due to the space given to the affairs of St. Bartholomew's Hospital. *En passant* we wish that Sir Henry Burdett would not write about "Bart.'s" as he does upon p. 78. This slang, however, in no way detracts from the value of the information concerning hospitals with which the book is mainly concerned. Not only are hospitals in these islands dealt with but there are also accounts of Indian and colonial hospitals, of those in Egypt, and of British hospitals abroad. There is in addition a section dealing with American hospitals. We can add nothing to what we have said upon previous occasions—namely, that the book is indispensable to anyone who wishes to know about hospitals and their management.

The Old Riddle and the Newest Answer. By JOHN GERARD, S.J., F.L.S. London, New York, and Bombay: Longmans, Green, and Co. 1904. Pp. 293. Price 5*s.* net.—In this work the author endeavours to demonstrate by quotations and inferences drawn from the writings of the greatest scientific men that the forces of the universe itself do not and cannot solve the great riddle which from the beginning of time nature has offered to every thinking man. The author says that the enemies of science are not the Philistines alone who would muzzle or stifle her. More numerous and dangerous are those, professedly of her own household, who ascribe to her pretensions of which she herself knows nothing and who strive to make her responsible for a philosophy entirely beyond her scope. The work is an inquiry as to how far the assumptions of scientific men are rational. That the Cosmos in which we dwell has not existed for ever is a truth enforced by the researches of physical science no less than by the clear teaching of reason. It certainly had a beginning and there must be a Cause to which that beginning was due—a cause capable of producing all which we find to have been actually produced. The material universe and the mechanism of the heavens, organic life with all its infinite marvels and varieties, animal sensation, human intelligence, the canons of beauty, the law of good and evil—all these must have existed potentially in the First Cause, as in the Source whence alone they could be derived. In particular the Law of Evolution has been studied in its various significations in order to determine from the point of view of reason and science alone whether it can be said that the prime factor is thus supplied. Darwinism is weighed and found wanting. Fleischmann's lectures, which have appeared in book form in Leipsic, are quoted which contend that "the theory of descent has not a single fact to confirm it in the realm of nature. It is

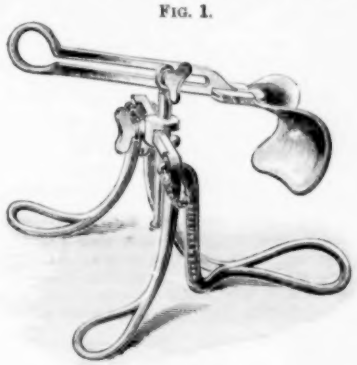
not the result of scientific research but purely the product of the imagination." The author contends that it has become apparent that the days of Darwinism are numbered. He considers that the result of the investigation makes it evident that while modern discovery has immensely multiplied and magnified the marvels which have to be accounted for, it has disclosed nothing which can be supposed to account for them in a manner to satisfy our reason and our intellectual need for causality. The origin and nature of matter and force, the source of motion, of life, of sensation and consciousness, of rational intelligence and language, of free-will, of the reign of law and order to which all nature testifies—all these are for science utterly unsolved problems. Since it is not possible to find the cause required within the world of material forces and sensible phenomena it becomes no less obvious that it must lie beyond, across the frontier which nothing material can pass. We know that a Cause exists. We know that it must possess every excellence which we discover in nature, all that she has and more, since what she derives from it the Cause of nature has of itself. In it must be all power, for except as flowing from it there is no power possible. Finally, as a capable Cause of law and order in nature and of intellect and will in man, the First Cause must be super-eminently endowed with understanding and freedom in the exercise of its might or it would be inferior to its own works. Nature not being intelligent, not even a being, but an order of things constituting a power subject to law, cannot therefore be God. She is the wondrous product of an Almighty Will. And so the author says that, in the words of Rivarol, God is the explanation of the world and the world is the demonstration of God. He adds that the acceptance of a Self-existent, All-powerful, and Intelligent Being can alone serve as a basis for any system of Cosmogony which satisfies our intellectual need of causation, while, on the other hand, the nature of this Being, as necessarily beyond the scope of our senses, can be known to us only indirectly through the effects of which He is the cause. The book is written in a scholarly vein and the diction is clear but the question involved is as old as human intelligence and the volume might just as correctly have been entitled "The Old Riddle and the Oldest Answer."

New Inventions.

SELF-RETAINING ABDOMINAL RETRACTORS FOR USE IN THE HYPOGASTRIUM AND EPIGASTRIUM.

RETRACTION of the parietal incision in abdominal surgery is only necessary when the viscus or tissue under operation cannot be brought outside the abdominal cavity. On these occasions, especially when considerable force has to be exerted and maintained for some time, automatic retraction, provided that the correct angle and direction can be readily obtained, is preferable to manual, firstly, because greater steadiness can be secured, and secondly, because it partially, or entirely, takes the place of an assistant, a matter of no small moment in operations of emergency in private practice and at all times a great consideration with many surgeons on the score of asepsis. The instruments, which are represented by the accompanying illustrations, have been made for me by Messrs. Mayer and Meltzer and consist of two pieces of apparatus for automatic retraction from the direction of the pubes and sternum respectively. The former, or hypogastric set, Fig. 1, is merely a further development of Doyen's self-retaining retractor, but differs from it in that the tripod stand, which is fixed by the weight of the pelvis as well as of the thighs, allows of variation of the position of the point from which retraction is made, both laterally and vertically. The latter is most essential in that the vertical distance between the surface of the operating table and that of the mons Veneris varies greatly in spare and very stout females. The pelvic limb of the tripod is detachable

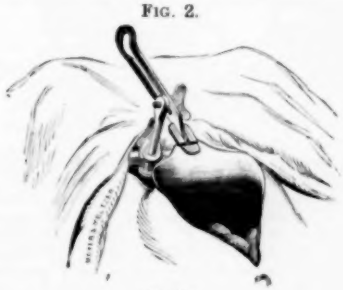
FIG. 1.



Hypogastric set.

to facilitate packing and is so shaped as to allow of instruments or the whole hand being introduced into the vagina. The blades, six in number, of two different depths and three different widths, are adjustable to the same handle.

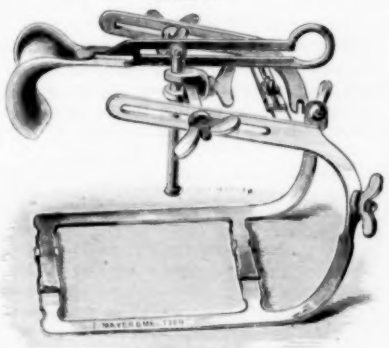
FIG. 2.



In situ.

When in position the instrument, if not required, is no inconvenience to the operator, since the handle is withdrawn towards the knees and the blade not attached. To retract a longitudinal or oblique incision in the lower

FIG. 3.



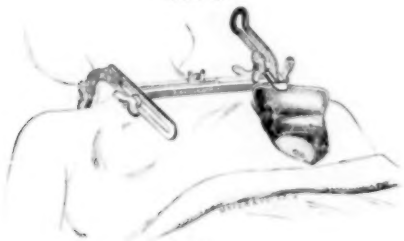
Epigastric set. The vertical pin which carries the retractor handle is erroneously shown projecting below the level of the horizontal bar. On the far side the frames are shown disconnected.

half of the abdominal wall (the operator standing on the right) the selected blade is introduced with its long axis parallel to that of the wound, rotated into the

transverse position and held in the lower angle of the incision with the left hand, whilst with the right the handle is first adapted to the slot on the back of the blade and then fixed firmly to the stand in the required position by tightening the two winged screws (Fig. 2). The operation in which I have found this apparatus of most use has been hysterectomy, especially when there has been troublesome bleeding from the floor of the pelvis or where in the case of a retroperitoneal fibroma a ureter has been accidentally wounded and required suturing.

The epigastric set (Fig. 3) consists of a double frame hinged together over the shoulders and capable of being fixed at any angle by means of two winged screws, thus allowing the elevation of the horizontal bar, which carries the retractor handle, to be varied according to the depth of the chest. The position of the bar can also be varied in the slots in the sides of the anterior frame according to the length of the chest. I have found this instrument of the utmost value in operating for perforated gastric ulcer in the neighbourhood of the cardiac orifice. A deep blade is used and the upper angle of the median incision together with the liver and left costal margin forcibly retracted upwards and to the left (Fig. 4). Respiration is not affected

FIG. 4.



In situ.

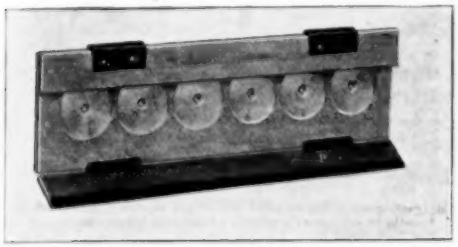
since the anterior frame does not come in contact with the patient at all and the posterior frame is either fixed by the patient's weight or at most is only further steadied by pressure of its curved ends as they pass over the shoulders against the thick edge of the trapezius muscle. The unavoidable spring in the frame is no disadvantage, all the slack being taken up when the blade and handle are fixed. Like the hypogastric set it can be set up and placed in position in a few seconds and if not required in no way interferes with the operation as the handle is withdrawn towards the chin. It can be easily packed into an ordinary bag, the width of each frame being reducible by half for this purpose.

W. F. BROOK, F.R.C.S. Eng.

Swansea.

AN INSTRUMENT FOR PREPARING AND CARRYING COVER-GLASS FILMS.

THIS instrument consists of an aluminium case made up of a central portion with two hinged sides. The central portion contains "cells," in which the cover-glasses exactly fit, of such depth that when in position the upper surface of the cover-glass is flush with the aluminium surface. The hinged



sides have a strip of indiarubber on the under surface to afford a firm hold on the cover-glass. For use, the cover-glasses are slid into the "cells," the hinged sides are turned down and held in position; a little blood is taken on the edge of a slip of visiting card or cigarette paper and lightly drawn across each cover-glass. The following are the advantages of this method which have been proved by several months' trial; it has been chiefly used for blood films but is equally good for others: 1. Saving of time at the bedside. No time is wasted choosing and picking up cover-glasses. 2. Cleanliness. The cover-glasses need never be fingered. When prepared the instrument can be kept closed by an elastic band applied lengthways and wrapped in paper, contamination of the films by dust, &c., being thus avoided. 3. If films require to be fixed by heat the instrument can be placed in an oven with the films in position. 4. The films obtained by this method are more satisfactory than those obtained by the usual process of slipping cover-glasses apart. 5. The instrument is inexpensive and can be prepared by any good mechanic.

D. G. MARSHALL,
Major I.M.S.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on April 28th, Sir WILLIAM S. CHURCH, Bart., K.C.B., the President, being in the chair.

The following gentlemen having passed the required examination were admitted as Members of the College: James Graham Forbes, M.A., M.D. Cantab., Donald George Hall, M.A., M.D. Cantab., Charles Christopher Heywood, M.A., M.B. Cantab., L.R.C.P., George Mackay MacDonald, B.A., M.B. Cantab., L.R.C.P., David Sommerville, B.A., M.D. R.U.I., and Edward Turton, M.D. Vict., L.R.C.P.

Licences to practise were granted to 99 gentlemen who had passed the required examinations.

A report was received from the examiners for the Murchison scholarship which was awarded to Mr. W. H. Harwood-Yarred, a student of St. Thomas's Hospital.

The following Members having been nominated by the Council were balloted for and elected as Fellows of the College: Bertram Louis Abrahams, M.B. Lond., William Cecil Bosanquet, M.D. Oxon., Thomas Robert Bradshaw, M.D. Dub., John Francis Harpin Broadbent, M.D. Oxon., Edmund Henry Colbeck, M.D. Cantab., William John Gow, M.D. Lond., Arthur John Hall, M.B. Cantab., Edward Johnstone Jenkins, M.D. Oxon., Arthur Carlyle Latham, M.D. Oxon., and Charles Arthur Mercier, M.B. Lond.

The following communications were received: 1. From the Secretary of the Royal College of Surgeons of England, reporting certain proceedings of the Council on April 14th. 2. From Lady Clark, offering for the acceptance of the College a marble bust of the late Sir Andrew Clark, Bart., by H. Bain-Smith, 1888. The best thanks of the College were given to Lady Clark. 3. From the Lister Institute, inviting the College to allow its President to be nominated, *ex officio*, a Member of the Council. The request was acceded to. 4. From the Board of Trade, thanking the College for the report on beri-beri and asking permission to print it. Permission was granted.

The quarterly report, dated April 15th, of the College Finance Committee was received and adopted.

A report, dated March 21st, from the Committee of Management was received and adopted. The committee recommended the Royal Colleges to insert the following note after Paragraph xviii., Section ii., of the Regulations—viz., "Note.—A candidate who possesses a registrable qualification is admissible to re-examination without producing evidence of attendance on additional hospital practice." The committee also recommended that the Simon Langton Schools at Canterbury should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry, physics, and practical chemistry.

Another report from the same committee, dated April 11th, was received and adopted. The report recommended that the St. Paul's Eye and Ear Hospital, Liverpool, should be added to the list of ophthalmic hospitals recognised by the Examining Board in England.

A report, dated March 4th, from the Laboratories Committee was received and adopted.

After some further routine business the PRESIDENT dissolved the Comitia.

THE LANCET.

LONDON: SATURDAY, MAY 7, 1904.

"Passing Off."

"THE methods of commercial dishonesty are many and various and if they amount to fraud they are illegal." The quotation is from a small volume recently published,[1] the author of which, Mr. J. CUTLER, K.C., as a barrister of experience and as an authority upon the law relating to patents and trade-marks, can claim to have had considerable opportunities of appreciating mercantile ingenuity. The contents of the book were originally made public in the form of lectures delivered at King's College, where Mr. CUTLER is professor of law, and it is consequently explanatory and instructive without being rigidly technical. Its subject also is calculated to interest others than students as it will explain to those concerned with commercial morality the extent to which the law enables honest traders to protect themselves and their customers against "substitution." The protection afforded by a registered patent or trade-mark is more or less familiar to all. The intricacies which beset the administration of the law, the technical difficulties which may prevent a trade-mark from being registered or which may cause another to be removed from the register, are matters which puzzle the layman and upon which even the lawyer may speak doubtfully, but the fact that there is a register which affords valuable protection to the owner of a name or emblem distinctive of his business is generally grasped, and it is equally recognised that a distinguishing device although associated with a trader's goods in the public mind may, nevertheless, not be registrable as a trade-mark. That which is not always understood, even by those persons who have dishonest ambitions with regard to their neighbour's customers, is that even if the latter has no trade-mark, either registered or registrable, he may still have a remedy against those who seek to sell their goods as his. His action, however, in this case will be not in respect of an infringement of a trade-mark but for "passing off" and the claim will be that by using a copy or a colourable imitation of the mark which denotes or distinguishes the plaintiff's goods the defendant is representing that his goods are those of the plaintiff. The aggrieved party will succeed if he proves, first, that the mark on which he relies distinguishes his goods in the market and, secondly, that the mark used by the defendant is calculated to represent the defendant's goods as those of the plaintiff. It will be remembered that in the recent action brought by Messrs. BURROUGHS, WELLCOME, and Co. against a firm of druggists the claim was to restrain the defendants from passing off their goods as the goods of the plaintiff as well as for the infringement of the "tabloid" trade-mark. It was the motion of the defendants to expunge this trade-mark from the register, their failure as to this, and their subsequent appeal which made this portion of the action so prominent. The plaintiffs, however, in addition to establishing their right to their trade-mark obtained an injunction as to the "passing off," and to this they might have been held to be entitled even though the word "tabloid" had been removed from the register.

The question of "passing of" is one of interest to medical men in respect of other goods besides drugs. There are many articles for internal and external use which the medical practitioner may recommend and in respect of which he may desire to rely upon qualities associated with the wares of a particular manufacturer. In these columns we frequently give the results of our examinations of articles of diet and of other things, the makers of which no doubt profit by such praise as we are able to bestow. This may be when the manufactured article is introduced to the public, perhaps by one who hardly recognises at first the value of his production and of its scarcely acquired reputation. Later, when it has come to be associated with his name or with the distinctive label or wrapper which he has chosen for it, he will find that others are only too ready to supply the demand which he has created. These will not only offer similar goods to his, which they may have a right to do, but will copy the general "get up" and appearance of his wares by which the purchasing public know them, with the direct object of deceiving buyers who are not closely observant. Practically all the leading cases upon "passing off," the outline of which Mr. CUTLER gives in illustration of his points, have been decided at the instance of firms whose names are familiar to everybody, such as LEVER in connexion with soap; DUNLOP in connexion with the accessories of cycling; KODAK, a name which must necessarily suggest a well-known firm but which had been applied by the defendants to bicycles; and HENNESSY in connexion with brandy. Some of these cases refer to the use of a name and some to the imitation of a wrapper or label. The remedy with which Mr. CUTLER principally deals is the civil remedy, the result of which is an injunction restraining the defendant from passing off his goods as those of the successful plaintiff, together with pecuniary damages where such are due. Proceedings of a criminal nature can also be resorted to under the Merchandise Marks Acts and Mr. CUTLER discusses in his concluding chapter the relative advantages of civil or criminal process and the circumstances which justify resort to the latter branch of the law.

The work to which we have referred, it will be observed, treats only of the deceit which takes advantage of the reputation of a brother trader and for which he accordingly seeks a remedy. It is not concerned with that iniquitous form of commercial dishonesty which indirectly injures the honest trader by passing off goods by means of the pretence that they are what in fact they are not. This more public offence is dealt with penally under such statutes as the Merchandise Marks Act and the Sale of Food and Drugs Act and frequent newspaper reports of cases affecting the food

[1] Passing off, or Illegal Substitution of the Goods of One Trade for the Goods of another Trade, by John Cutler, M.A., K.C., Professor of Law at King's College, London, and editor of the Official Reports of Patent Design and Trade-mark Cases. London, Gay and Bird, Limited, 1904, pp. 94, price 1s. net.

of the people and other matters show how eager dishonest traders are to profit by deceit. The recurrence also of similar cases with fresh evidence and renewed arguments as to points already discussed shows that our laws are sometimes not easy to construe and are consequently uncertain in their operation. We have referred from time to time in THE LANCET to the sale of spirit not distilled from grape wine under the name of brandy and a decision of the Scotch courts[2] seemed to have settled the question. We observe, however, that it is again under discussion at a London police court and in the circumstances can only refer to it by saying that the sooner a matter of such importance is definitely decided the better it will be for the public. To some extent, however, the remedy for "passing off" is in the hands of the public themselves. A little more thought and observation and a little less readiness to accept the usually cheaper imitation, together with a little more outspoken condemnation of the attempt to deceive them, would before long convince the retail trader that he was injuring himself for the sake of temporary gain and might cause him to reflect that honesty, even though it may require the exercise of some self-denial, may be the best policy after all.

The Value of the Auricle of the Ear.

THE question of the utility of the auricle in man has often been discussed and the most diverse opinions have been held on this subject. It is generally conceded that in most people at least the ear is ornamental but this is almost the only point on which there may be said to be unanimity. While some think that this is its sole function others have attributed to it many virtues. It is said to provide protection for the true auditory apparatus but this can only be slight. It may serve to keep off to some extent the wind, sun, and dust, but it cannot provide much defence. It is claimed that the auricle prevents perspiration from the temporal region running into the ear. This is perhaps true but it can hardly be considered a function of much importance. It is worth while to inquire whether the auricles have not some more useful duties. In many of the lower animals the ear undoubtedly serves to collect sound waves and by its movements the direction of the sound can be more readily determined. A very few minutes' observation of a horse will demonstrate the great use to which the extrinsic muscles are put. Even the intrinsic muscles are functional in many of the lower animals and the "pricking up" of the ear is partly due to these muscles, but though the same expression is applied to the ears of human beings it is doubtful if it corresponds to any definite movement. The Latin phrase, "*Arrectis auribus*," shows that amongst the Romans the idea also prevailed that the ears move to assume a listening position. It is true that a few specially gifted individuals can move their ears and a schoolboy possessing this accomplishment readily excites the admiration and envy of his fellows. We have, however, never been able to assure ourselves that the power of moving the ears in man gives the possessor any better sense of hearing. ARBUTHNOT, in the "Memoirs of Martinus Scriblerus," tells us that MARTIN'S father CORNELIUS was very anxious that his son should be able to "move his ears like a drill," but such anxiety on the part of parents is not common.

Formerly it was believed that removal of both auricles had many dire effects. It was supposed to cause deafness and when the law recognised loss of the ears as the correct penalty for various faults, crimes, and misdemeanours there was no lack of cases in which it would have been possible to note such an effect; but history is silent on this point, and inasmuch as no mention is made of any deafness resulting from this "legal" operation we may conclude that no marked impairment followed. PRYNNE'S hearing was certainly in no wise impaired by the loss of his ears and we know that they were completely removed, for the first time he was condemned to lose his ears they were removed with shears, and at his second condemnation the "stumps" left were shaved away. Yet for more than 30 years after this he took a very active part in many debates in the House of Commons. The case of Dr. S. A. PAGAN of Edinburgh is also worthy of being quoted. Before he studied medicine he was an officer in the army and as a subaltern he was present at the battle of Waterloo. There he was struck on the left side of the head by a cannon ball which completely carried away his left ear. His hearing on that side was but little affected, though slightly dulled. What little impairment there was may be put down to the injury to the bones, for there was some exfoliation of the malar bone and of the zygoma, and so it is certain that there had been a severe contusion which may have damaged some other part of the auditory apparatus. It appears to have been held formerly that loss of both ears rendered a man incapable of procreating and it has been said that the object of inflicting this punishment on malefactors was to prevent the production of other individuals with similar vicious tendencies. It is interesting to find so very advanced an application of the doctrine of heredity three centuries ago. We have no evidence that the punishment was effective. In 1617 the College of Physicians of London found that a certain Dr. ALEXANDER LEIGHTON, who had been ordained a priest, was practising "physick" in London without permission. He claimed that he had a right to practise by virtue of the degree which he had taken at Leyden. The President and the Censors forbade his practising. He then endeavoured to obtain a Licence from the College but it was refused; for the statutes of the College declared that no one in holy orders should be admitted to the College or allowed to practise. Dr. LEIGHTON, however, persisted. He was arrested and censured and ultimately by a decree of the Star Chamber he was deprived of his ears. They had very drastic methods in the early part of the seventeenth century. We presume that all the legislation under which such penalties were inflicted has been repealed, otherwise the BISHOP of ZANZIBAR, whose interesting note upon a case of shoulder presentation ending by natural delivery we publish in this week's issue, is running a grave risk in thus announcing his double professional status!

There seems to be some relation between the condition of the mind and the form of the ears but the mental condition of the ass has been much belied. It is very common to find

[2] Wilson and M'Phee v. Wilson, 41 S.L.R. 195.

ill-shapen auricles in persons who are congenitally mentally deficient. However, it by no means necessarily follows from this observation that all those with misshapen ears are inadequately endowed mentally. URBANTSCHITSCH looked upon the auricle both as a condenser and a conductor of sound to the ear; he also considered that it acted as a resonator for the higher tones. Mr. A. GARDINER BROWN made a large number of observations on the structure of the ear and its intrinsic muscles and he was led to believe that the auricle can by resonance reinforce musical sounds so as to aid definitely in their perception; and this, he thought, was brought about chiefly by the action of the intrinsic muscles of the auricle in altering the shape of the hollows of the ear. Anyone who has ever found after much searching the slight muscular bands which are dignified by lengthy names and classed as the intrinsic muscles of the auricle will be disinclined to attach much weight to any theory which depends on the functional value of these involuting fasciculi. To sum up, we may take it that there is sufficient evidence that the auricle does assist in catching and reflecting into the external auditory meatus some sound waves which might otherwise escape; that by its aid we can to some extent at least estimate the direction whence a sound proceeds; that it may convey directly to the temporal bone and so to the cochlea some auditory vibrations; and lastly that it can serve to some slight extent as a resonator to musical sounds. He who loses his ears may suffer some little impairment of his hearing in ordinary matters and perhaps lose a little of the power of appreciating musical sounds, but, so far as we know, there are no other effects.

Sanatoriums for Working Men.

MANY of our readers are aware that in connexion with the Hospital Saturday Fund exists the Association for the Establishment of Sanatoria for the Working Classes. This association employs one means towards its end that is likely to be of great value and that deserves the most cordial support of the medical profession. We refer to the practice which it has adopted of bringing medical lecturers into contact with audiences of working men in order that the aims of the association may be explained to them and that thus the funds of the working men's clubs and friendly societies may be in part devoted to the establishment and maintenance of sanatoriums. A lecture of this kind under the auspices of the association to which we refer was recently delivered by Dr. ARTHUR C. LATHAM before the delegates from a hundred working men's clubs. It is easy to see from the report in the working men's paper, *Club Life*, which lies before us, that Dr. LATHAM'S lecture was thoroughly appreciated and that it is not likely to have fallen upon barren ground. Since, however, it probably will not come before the eyes of our readers, although it would provide them, too, with several points of interest, we propose to give a few extracts with such comment and criticism as may suggest themselves.

The lecturer first devoted his attention to pointing out in plain but vigorous language the formidable nature of the enemy with which all associations are dealing the aim of which is the diminution of tuberculous disease in this country. So long as 50,000 deaths per annum are claimed by consumption the medical profession cannot rest satisfied even though improved sanitation and hygiene have reduced the death-rate already by two-thirds. Consumption hospitals, general hospitals, and Poor-law infirmaries do all that they are able. It is not enough. There is a general agreement that at the present day the most effective weapon with which to combat pulmonary tuberculosis is open-air treatment. In the vast majority of cases where consumption attacks a member of the working classes this treatment cannot possibly be carried out in an effective manner in the patient's own home. Nor in present circumstances can he afford to enter upon such sanatorium treatment as is provided. Moreover, were he able to raise the necessary money there is not enough accommodation for him and his fellows. Working men, therefore, require sanatoriums if they are to be saved from disablement or death by a disease which, owing to conditions of work, attacks their class in huge numbers. Even sanatorium treatment, however, is no miraculous panacea and cannot save patients in whom the disease has already been allowed to advance unchecked to a serious stage of destruction. Allied, therefore, to efficient sanatorium treatment is the all-important question of early diagnosis. *Apropos* of this matter Dr. LATHAM spoke warmly and to the point and in a manner that is likely to appeal to most medical readers, as it certainly did to the sound common-sense of the business men who listened to him. "Many of you depend on your club doctors for this early detection of the disease. These doctors are a painstaking and skilled class of men but you work them hard and you give them, if I may say so, a ridiculous wage. The detection of early consumption is a difficult matter and often requires prolonged and repeated examinations. Your club doctors are so overworked and so inadequately paid that it is not surprising that sometimes consumption is not detected until the disease has made considerable and dangerous progress. Almost everything of value in this world is worth paying for and medical advice is no exception."

It was, we suppose, no part of the lecturer's duty to suggest some scheme by which the likelihood of correct early diagnosis in the case of working men and women might be heightened. And, indeed, it is very difficult to see what are the steps to be taken in the case of a disease the onset of which may be so insidious as is often that of pulmonary tuberculosis. If, however, Dr. LATHAM'S words do anything towards improving the conditions of hurry and scant reward under which most club work is perforce performed they would confer a boon apart from the furtherance of the object with regard to which they were particularly uttered. Dr. LATHAM reached his hearers also when he pointed out the economic faultiness of a system which is extravagant of life. Here he was able to support his argument by the facts that the German system of compulsory insurance has brought to light. When the law was passed compelling all who earned less than £100 a year to insure against sickness the insurance companies soon found themselves hard hit by cases of consumption. On medical advice in self-protection they started a scheme of sanatoriums. After years of trial the system is being extended, so greatly do the companies find

that it saves their pockets. Sanatoriums, then, properly instituted and organised, will in the long run save the working man money as well as give him much alleviation from pain and sickness and the misery of knowing that his wife and children are impoverished through his increasing incapacity to work. Another important function which they perform is educational. Every man who has been resident in one comes away impressed with the importance of cleanliness in such details as avoiding free expectoration, suppressing cough, and so on. We trust that the Association for the Establishment of Sanatoria for the Working Classes will prosper in its work and not the less because it aims at helping men to help themselves. With the aid of many such lectures as that delivered by Dr. LATHAM, containing sound doctrine couched in language that stirs the intellect of even the least cultivated listener, we cannot doubt that the association will do a vast amount of educational good which will ultimately blossom into actual performance on the part of working men.

Undesirable Marriages.

FEW things could be more advantageous, as guides to the best possible management and control of national life, than that medical men should from time to time make their voices heard by the public in relation to all the social questions concerning which physiology is especially qualified to speak, or which, under at least one of their aspects, may be profitably regarded from a physiological point of view. On this ground we cordially approve of the action taken by Sir JAMES CRICHTON-BROWNE in recently addressing letters on the subject of undesirable marriages to a non-medical contemporary, although, at the same time, we have to confess our inability to regard some portions of the subject precisely from his point of view. He commenced by informing his readers that it was in contemplation in some of the more "go-ahead" States of the American Union to require certificates from a medical board with regard to the physical fitness of candidates for matrimony and to prohibit the performance of any legal or religious ceremony until this requirement had been fulfilled. The objections to such a scheme are obvious and, as it seems to us, fatal; it could perhaps only be adopted among a people sufficiently "go-ahead" to have left their heads behind them as unnecessary impediments to their fleet career. Neither can we agree with Sir JAMES CRICHTON-BROWNE in his opinion that the question of marriage is deriving increased importance by reason of something like a progressive physical deterioration of the British races; and we think it is to be regretted that what is, on the whole, sound and judicious advice should even appear to rest upon the frail foundation of this unproved hypothesis. In a population of 42,000,000 there must be numerous departures from the average in both directions—that is to say, in the direction of athleticism as well as in that of debility, and there are no available means of comparing these departures, as they exist to-day, with the similar departures of any former generation.

It is, of course, easy to declaim about the feeble and stunted condition of many of the dwellers in our great manufacturing centres; but a slight reference to the controversial literature of the first agitation for the Factory Acts will afford much reason to believe that the conditions then existing were far worse than any which exist to-day; and, if so, their effects are practically certain to have been more serious than any which we may now have reason to deplore. The reports of recruiting officers, of which so much has recently been made, carry little conviction to our minds; mainly because, thanks to the survival of some of the bad traditions of the past, the army is still regarded in some quarters as a receptacle to which wastrels may naturally gravitate. In this way it attracts, although it is unable to receive, the physical and moral failures of many other callings, as well as the habitually underfed under the pinch of hunger. It would be easy, of course, to find examples of a precisely opposite character. In fact, it is because our army contains such a bulk of fine young fellows that the perpetual leaven of their inferiors does no harm. The transmutation of the lout and the loafer into the smart soldier takes place with daily regularity owing to good example. The magnificent young animals that abound in the cottages of Devonshire and Cornwall, the mostly town bred boys of the Royal Navy after a few months of feeding and training, or the party of London policemen despatched to guard the Royal contributions to the St. Louis Exhibition, might all be cited for the confusion of the believers in national degeneracy. The argument on either side proves nothing; and the case is one in which the truth can only be ascertained by patient and systematic inquiry into the facts—that is to say, into the actual averages of physical development and into the character and extent of the departures from them. Until the results of such inquiry are made known we may at least find consolation in the knowledge that the physical conditions, even of town children and of town dwellers, have been very materially improved within recent memory. Games, bicycles, and increased facilities for reaching the country have all taken their share in the promotion of changes which cannot but contribute to health, to vigour, and to efficiency.

While thus parting company with Sir JAMES CRICHTON-BROWNE in his character of pessimist we agree with him in his assertion that large classes of the most degraded of the people should be restrained by law from possibility of propagating their kind. How this is to be done is another matter. The permanent sequestration of all imbeciles, weak-minded persons, habitual criminals, and, we would add, habitual drunkards, would be a course fraught with advantage to the community, not only in so far as it would prevent the birth of a vast number of children predestined, if only by their environment, to weakness or to crime, but also by reason of the degree in which it would act as a deterrent from the first lapse into intemperance or into criminal courses. We cannot, however, imagine a statesman framing a Bill of so drastic a nature. No government would support it, if only because no one can fail to realise the insuperable difficulty of saying exactly when a man is silly or pliable to the extent of being "weak-minded," or when he his perverse or bibulous to the extent of being an "habitual criminal," or an "habitual drunkard." We have somewhere seen the excellent suggestion that every girl, through her parents or natural guardians, should insist upon the acceptance of her

intended husband by a responsible insurance company before consenting to marry him; and this is a requirement in support of which public opinion might without any great difficulty be enlisted. The benefits of insurance are now rendered available for persons and classes of very moderate means; and we doubt whether the attraction between the sexes, or rather between particular individuals, is in any large number of cases sufficiently overmastering to cause the complete neglect of prudential considerations if these were but rendered prominent as matters of education, and strengthened by the common consent and practice of those to whom they would chiefly apply. Medical practitioners might do much to promote a proper estimation of the facts among their patients. They would seldom be justified in interfering with unasked advice as to any particular alliance, but they should earn the gratitude of the public by keeping the facts of physiology and pathology in relation to marriage under the notice of the numerous parents who might be prevented by such knowledge from consigning their children to lives of misery.

Annotations.

"Ne quid nimis."

THE OLD HARDSHIP OF LONDON MEDICAL STUDENTS.

WE have received from Mr. F. W. Collingwood, whose energetic attempts to obtain for the diplomates of the Conjoint Board of England a better recognition of the value of their professional position are well known to our readers, an interesting communication and series of tables intended to show the relative positions taken at the examinations for the medical services of the navy, the army, and the Indian army collectively by the graduates or licentiates of the several qualifying bodies in Great Britain. Mr. Collingwood's main proposition, that the success at these examinations of the Licentiates of the English Conjoint Board has been remarkable and such as to place these gentlemen in the first rank of the candidates, is justified by the figures, while at the same time it bears ample testimony to the diligence with which they have been taught, to the care with which they have been examined, and to the zeal and industry with which they have applied themselves to the successive subjects of their studies. In view of the undoubted facts it would seem almost ungenerous to suggest that the numbers are hardly large enough to serve as a basis for general conclusions or to recall the wit and the wisdom embodied in Sir Robert Peel's familiar dictum that there is nothing so misleading as facts except figures. Without any such reservation we may congratulate the Licentiates of the Conjoint Board upon their successes and may express a confident belief that, in the words of the Liturgy, they will lead the rest of their lives according to this beginning, but we fear that they are doomed to disappointment if they participate in the hope expressed by Mr. Collingwood in his covering letter to us to the effect that their successes may bring about some recognition of their order by the reconstituted University of London. We doubt whether the authorities of the University will ever incur the risk of appearing to diminish the value of their degrees by conferring them after examinations which, however excellent as tests of professional knowledge, have not been so contrived as to afford evidence of equivalent general culture. The authorities are likely to believe that the best service which they can render to the future of the medical profession is rigidly to maintain a high standard alike of general and of special acquirement; and if they do this the men who, however excellent, are left out in the cold during a period of transition must reconcile themselves to their own loss by a consideration of the ultimate greatest happiness of the greatest number. All our readers know how earnestly and for how long we have urged that proper facilities should obtain for the securing by London students of a medical degree upon terms comparable with those enjoyed by students in other parts of the kingdom and in the provinces. We have reason to know that our feeling is shared by a number of men who are influential in the counsels of the reconstituted University of London and it stands to reason that London teachers can have only the same view. Closer relations between the University of London and the Royal Colleges, resulting in a simplification of the general examination scheme and accompanied by a substantial levelling up of preliminary education, might easily bring the attainment of a medical degree within the possibilities of all able and industrious London students. It is hard to think that many who in such more favourable circumstances would certainly have become entitled to the degree of doctor will remain without that title, but for this we see no help. Mr. Collingwood and those who are acting with him have our sympathy, but it is barren sympathy, for we can suggest nothing that would be likely to lead to a fruitful termination of their attempt to obtain retrospective recognition by the University of London of the work done by the diplomates of the Royal Colleges.

THE LONDON SCHOOL BOARD.

ON May 1st, 1904, the London School Board ceased to exist. It was the creation of the Education Act of 1870 and its extinction is due to the Education Act of 1903. The Board took some three years to settle down to work and its first normal year may be considered March 25th, 1874, to March 25th, 1875. During this year the number of children in attendance was 68,250, the precept or amount of money which had to be found by the ratepayers was £149,866, and the rate per £ of rateable value was 1·75*d*. For the year 1902–03 the number of children in attendance was 475,150, the precept was £2,437,772, and the amount of rate was 14·66*d*. On the whole, it must be said that the defunct Board has done good work. It has created order out of chaos, as a perusal of the final report of the School Board for London which has just been issued will show. The Act of 1870 empowered the Board to give elementary education to children but with the typical vagueness of governmental instructions the Act defined neither "child" nor "elementary education." So the School Board being left with a free hand practically by means of evening continuation schools educated children up to the age of 18 years in 46 different subjects (Report, p. 291). It is fair, however, to say that in 1890 an Education Code Act was passed which amended the Act of 1870 by providing that elementary education need not form the principal part of the education given in evening schools. Some of the expenses of these schools are defrayed by fees but apparently the ratepayers pay most of the cost. Perhaps it is better to teach too much than too little but the long-suffering ratepayer had no cause to love the School Board, the more especially as in many cases he felt morally bound to subscribe to his parish church schools as well as to pay his School Board rate But it is not our province to discuss the "religious difficulty." Rather would we turn to the conduct of the School Board as regards medical matters. The Board came into existence in 1870. Not for 20 years did it appoint a medical officer and when in 1890 it did so his salary was £400 per annum,

rising to £600. He was allowed to do other work and held three other important appointments. He resigned in 1902. During this period no report was issued by the medical officer. The first report was issued in 1903 by Dr. James Kerr who was appointed in 1902. His salary was £800 per annum, rising to £1000, and he was not allowed to hold any other appointment. Let us give the Board credit for what it has accomplished. When it commenced work the prospect was enough to appal the most ardent lover of education. The Board was hampered by a badly drawn Act and by the fatal British love of compromise. As a Board it acted with conspicuous unfairness for years towards the medical profession and was not infrequently extravagant. But within the last few years, owing to wholesome checks administered by the result of Regina *v.* Cockerton and the refusal of the medical profession to give certificates, the Board was beginning to settle down. Of the conduct of its individual members we can say nothing but praise. They have ungrudgingly devoted their time and their talents to the service of the children of the poor and they have left the new education authority a sound system upon which to carry on the work which the School Board organised.

MALARIA AND PREVENTIVE MEASURES.

ONE of our correspondents has recently had the opportunity of meeting some of the invalids from the English regiments quartered temporarily in the hinterland behind Aden during the progress of the Boundary Commission which is working under General Maitland to decide on the frontier which Turkey is to accept. It appears that the Hampshire Regiment landed in Aden in February, 1903, 1100 strong, being actually over strength. 300 men were despatched to take part in the Somaliland campaign, where there are certain obvious risks contingent on active service and a fair chance of a medal for the survivors when the fighting is all over. The rest of the regiment, all presumably in good health after service in India, were marched up to the hills where they left sandy wastes behind them and got into a hilly country where tea and coffee are grown. A few weeks ago, or about a year after the regiment landed from India, the principal medical officer held an inspection and decided that 75 per cent. of the men were unfit for duty. We understand that there have been 32 deaths in this regiment in Aden and that about half of these were due to malaria. The ordinary causes of sickness must have accounted for a few of the 75 per cent. but the great bulk of them are being invalided for malaria with the ordinary symptoms of intermittent fever, sweats and consequent debility, anæmia, and enlarged spleens. There are pools of water in this hinterland near the soldiers' camping grounds and many mosquitoes and the regiment was paraded daily for a preventive dose of quinine while a non-commissioned officer stood by to see that the men really drank the prescribed dose. But we are informed that there were no mosquito nets provided by the authorities either for officers or men and the officers naturally suffered in a similar proportion, four having been already invalided home and three now being in hospital in Aden. The fever-stricken men blanched as if from prolonged hæmorrhage, crawling about like chronic invalids, are now being sent home, and as their mission was a political one they will probably get no medal to compensate them. But we now know that malaria is a preventable disease. Why was this regiment not supplied with mosquito nets which are now served out even to black soldiers in the Soudan? If our information is incorrect we shall be glad to have it authoritatively denied but if it is correct in substance we hope that the matter will be inquired into. We have heard it whispered that in India troops in barracks even in malarial stations are not yet supplied with mosquito netting, though the hospitals are well provided with it. It is only fair to the Indian Government to state that the Dublin Fusiliers who were relieved by the Hampshire Regiment and the "Buffs" who were sent to Aden last October have both suffered less from malaria than the unfortunate Hampshires.

THE HOUSE OF COMMONS AND VENTILATION.

IN an annotation which appeared in our issue of Oct. 10th, 1903, p. 1033, the substance of the report which a select committee of the House of Commons had presented in regard to the ventilation of the House was embodied. This topic has again been disturbing the equanimity of Members without, so far as we can see, any very urgent reason and the animated discussion upon it which on April 28th occupied so large a part of the valuable time of our legislative assembly does not appear to have produced any particular result. As we pointed out at the time there is really very little to find fault with in the ventilation and Mr. T. W. Russell was probably quite correct in saying that a great deal of nonsense was talked about the matter. This opinion seems to have been shared by Sir M. Foster, Sir W. Foster, and Dr. Farquharson, all of whom are well qualified to form a competent judgment on such a point. The only serious defect in the arrangements which the committee's report brought to light was that the air inlets were placed in the floor and covered by matting over which those who entered the chamber had to pass, so that particles of dust and mud from the boots of the persons concerned were introduced into the air current and so disseminated. This, of course, is by no means a satisfactory system and the sooner it is amended the better. We do not suppose that Members would take kindly to Mr. Weir's suggestion that they should leave their boots at the door, even though the assistance of "eight Japanese girls in their native costume" was available to this end, but some inexpensive structural alterations overcoming the difficulty should be quite feasible.

ATTEMPTED SUICIDE BY MEANS OF ILLUMINATING GAS.

IN the *Boston Medical and Surgical Journal* of March 24th Dr. F. Holyoke has published a case of attempted suicide by means of illuminating gas which presents several points of interest. The inhabitants of a tenement house were disturbed by moaning in one of the rooms during the afternoon and evening. At 8 P.M. they knocked at the door but were not answered. The police were called in and on breaking open the door found the windows closed tightly and gas escaping from two jets. The air was unbreathable and a man, aged 44 years, was lying unconscious in an easy chair. He was removed from the room and seen by a medical man within ten minutes. He was perspiring profusely and his clothes were drenched with sweat. The pupils were dilated, the face was cyanotic, the limbs were relaxed, and the pulse was imperceptible at the wrist but a feeble cardiac impulse could be felt at the rate of 140 a minute. Respiration was very slow and gasping and the jaw had dropped. After artificial respiration the breathing became more rapid. Strychnine and nitroglycerine were injected and the pulse was restored. At 9.30 P.M. the skin was pale and cold and the limbs were rigid and convulsed. The pupils were dilated and did not respond to light. There was a naphtha-like odour from the breath which did not disappear until the fourth day. The rectal temperature was 96·8° F., the pulse was 142, and the respirations were 32 and shallow. Large mucous râles were heard over the lungs and persisted until the second day. The temperature did not become normal until the third day; then it rose steadily until the sixth day when it reached

100·6°. Consciousness was gradually regained on the night of the second day. For the next two days the patient complained of great headache and of numbness in the limbs, which latter lasted for a week. On the second day was noticed a peculiar condition of the parts on which he rested when in the chair—the shoulders, the sacrum, and the buttocks. They were thickened and brawny, bright red, hot, and tender, as though scalded. After a few days the skin became loose, leaving a large denuded surface which healed slowly. The muscles of the left leg were paretic for several weeks. There was also vaso-motor weakness of this leg: when standing was attempted the skin became turgid and purple with distended vessels. The gas was a mixture of two parts of coal gas and one part of water gas.

THE TAX UPON A CUP OF TEA AND A GLASS OF BEER.

WITH regard to the proposal of the Chancellor of the Exchequer to raise the duty on tea to 8*d*. per pound a little calculation will show that when this tax is realised the indirect duty paid upon a glass of beer will still be higher than that paid on a cup of tea. Of course, as Mr. Austen Chamberlain said, everything depends upon the lightness of the beer and the strength of the tea. The question put to him in the House of Commons was: "What is approximately the amount of indirect taxation carried by a glass of light beer and a half-pint cup of tea of moderate strength?" There is no difficulty in estimating the indirect taxation upon a glass (half-pint) of light beer, for the duty upon such beer, the wort of which does not exceed a gravity of 1055, is 8*s*. per 36 gallons, which is equivalent to one-sixth of a penny on the half-pint glass. Coming to tea we may fairly assume for the purpose of calculation that on the average one teaspoonful of tea is used for making a half-pint of tea (a breakfast-cupful) and the mean weight of one ordinary teaspoonful of tea is, we find, 40 grains. There are 7000 grains in the pound, so that the indirect taxation upon a teaspoonful of tea or upon a cup of tea made from it would be $\frac{1}{7}d$. In other words, the indirect taxation on 22 cups of tea would be one penny, while the taxation on six half-pint glasses of light beer would come to the same sum. The indirect taxation, therefore, is nearly four times heavier on the glass of beer than it is on the cup of tea. The taxation of strong beer is, however, proportionately heavier. The question raised is of importance and it is interesting to find that on calculation the beer-drinker pays more taxation than does the tea-drinker. Total abstainers therefore can hardly prefer the charge against the Chancellor of the Exchequer that as compared with tea-drinking beer-drinking is encouraged.

STEREOGNOSIS AS A LOCALISING FACTOR IN CEREBRAL AFFECTIONS.

THE value of stereognosis as a sign in the diagnosis of affections of the brain may now be said to be established firmly by clinical evidence of indisputable character. In the *Journal of Nervous and Mental Disease* for April Dr. William Bullard of Boston, U.S.A., states that astereognosis—the inability to recognise the character and identity of small solid objects placed in the hands—"may be caused by affections of the cerebral cortex, by subcortical lesions, or by lesions in or near the optic thalamus," and occasionally by lesions of the pons and bulb. These various points constitute the complex pathway of sensations which, proceeding from the stimulus of the object grasped and manipulated in the hand, are conducted to the cerebral cortex, and hence the exact localisation of a lesion at any one point of this pathway is not always possible to be made in the absence of certain associated signs. A clinical description of the phenomenon of astereognosis and of its tests was published three years ago in THE LANCET[1] and illustrative cases were recorded. The balance of clinical and pathological evidence which has been accumulated since then shows that lesions of the parietal area of the cortex close to the rear of the genu of the fissure of Rolando are very frequently associated with varying degrees of astereognosis. There is also strong clinical evidence that subcortical lesions in this situation may produce the same symptom. Verger has reported several cases of cortical lesions in which astereognosis was present but only one in which there was proof by operation of the site of the lesion. The case was that of a man with a hæmorrhagic clot which had destroyed a part of the brain cortex. On removal of the former after trephining (by Lannelongue of Paris) the cortex was seen to be destroyed in the region of the middle third of the Rolandic area (ascending frontal and parietal convolutions), while the subjacent white substance was softened and friable. Isolated cases have been reported of lesions in the middle part of the ascending parietal convolution and the adjacent part of the inferior parietal lobe by various observers (Raymond, Walton and Paul, Dana, Mills, and Verger) which confirm the accuracy of the localisation of the "stereognostic sense" of the hand and fingers in this region, while the now classical case of Mills and Keen has shown that a single circumscribed lesion of the corona radiata lying deeply and close to the optic thalamus may produce astereognosis as an early and prominent symptom. Dr. Bullard's own case is that of a man aged 58 years, who had been addicted to alcohol. In May, 1902, he began to suffer from numbness of the left arm and leg; his lower extremities "often felt as if they were asleep." He was often unable at night to determine the position of his legs among the bed-clothes. Six weeks later he consulted a physician who found that astereognosis of the left hand was the most prominent symptom. There was some lack of "muscular sense" in this hand but muscular power (grip on the dynamometer) was unimpaired. No Romberg's symptom of ataxia was present, though the gait was a little awkward owing to a slight "dragging" of the left foot in walking. There was marked exaggeration of the knee-jerks. He grew feeble and early in July developed optic neuritis and some degree of anæsthesia over the lower part of the face on the right side. Sensation to temperature changes, touch, and pain remain normal in both hands but marked astereognosis persisted in the left hand and on the left forearm. A diagnosis of cerebral tumour was made. The patient gradually grew worse and died about the middle of September, having in the meantime lost all power of the left arm, hand, and foot. The necropsy disclosed some degree of arterio-sclerosis and diffuse nephritis. A tumour was found deeply imbedded in the brain substance of the right cerebral hemisphere. It was ill defined externally and in places approached the cortex; internally it reached the surface of the ventricle. The structures involved by this large growth included (together with adjacent parts of the corona radiata) the subcortical radiations distributed upwards to the parietal area of stereognosis as before defined and seemed therefore to support the correctness of the doctrine of the localisation of the stereognostic function.

THE SANITARY INSTITUTE.

Dr. Robert Farquharson, M.P., vice-president of the Sanitary Institute, occupied the chair at the dinner held on May 2nd at the Hôtel Métropole, London. After the usual loyal toasts Sir R. M. Hensley, chairman of the Metropolitan Asylums Board, in proposing the toast of "The Navy, Army, and Auxiliary Forces," testified to the value of the work that had been done

[1] THE LANCET, May 25th, 1901, p. 1483.

by the Royal Army Medical Corps. Lieutenant-Colonel R. H. Firth, R.A.M.C., in replying, said that a plan was in progress by which it was hoped a greater knowledge of elementary sanitation would be disseminated among the non-medical men in the services. Sir R. Douglas Powell, in proposing the toast of "The Houses of Parliament," referred to the sanitary condition of the House of Commons. It appeared that legislators were condemned to breathe an atmosphere which trickled through tortuous and subterranean passages and then ascended through a carpet soiled with the dust shed from the shoes of the Members of Parliament on their way to and from the lobby. He shrank from describing the vast army of microbes, aerobic and anaerobic, malignant and beneficent, classified and unclassified, said to flourish in the legislative chamber. In his opinion the Sanitary Institute ought to look into the matter. Sir Francis S. Powell, M.P., in replying to the toast, said that in the opinion of Sir Walter Foster there were good microbes and bad microbes and it was a question whether in destroying them they had not destroyed more good ones than bad. The result was, however, that the last state of the House was worse than the first. Referring to the work of the Sanitary Institute he considered that in London there had been an improvement in sanitary conditions which almost amounted to a revolution. He recognised signs in the provinces that led him to consider that the housing problem was almost solved. He advocated sanitary missionaries who should proceed from house to house instructing housewives in the elementary laws of sanitation. Sir John Ure Primrose, Lord Provost of Glasgow, proposed the toast of "The Sanitary Institute of Great Britain and the Colonies," which was replied to by the chairman, Dr. Farquharson, by Mr. Arthur H. Reid, chairman of the board of examiners for the Sanitary Institute of British South Africa, and by Mr. William Whitaker. Mr. E. W. Wallis, the secretary, received many congratulations on the success of the dinner. It may be mentioned here that one of the special features of the Health Exhibition of the Sanitary Institute at Glasgow in July next will be a municipal exhibit arranged by the different departments of the Glasgow corporation. The cleansing department proposes to arrange for, amongst other things exhibits of a model up-to-date destructor and the Globe fertiliser; the gas and electric departments will exhibit the latest developments in illumination; and the sewage departments productions from what were formerly waste products. The other departments of the corporation will also be well represented. The social and holiday aspect of the Congress has not been overlooked and excursions have been arranged to the following amongst other interesting places, Loch Lomond, the Trossachs, and the Falls of Clyde.

INVESTIGATIONS INTO THE CAUSATION OF SMALL-POX.

AT a meeting of the Metropolitan Asylums Board on April 30th the hospitals committee reported that it had considered an application from Dr. T. F. Ricketts, medical superintendent of Joyce Green Small-pox Hospital, requesting that authority should be given to him to carry on in conjunction with Dr. C. J. Martin, F.R.S., director of the Lister Institute of Preventive Medicine, experimental work in connexion with the causation of small-pox. Dr. Ricketts informed the committee that such authority would only imply stabling accommodation with attendance and possibly a slight increase in the expenditure usually sanctioned for hospital scientific apparatus. The recommendation gave rise to a great outburst of antivivisectionist oratory on the part of a small section of managers and amendments were moved to refer the report to the hospitals committee and also to the general purposes committee for further information. Both amendments were rejected and the recommendation of the committee was agreed to. Great indignation was expressed at the action of a member of the hospitals committee who informed his board, Hackney, of the application of Dr. Ricketts before the report with its recommendation was printed on the agenda. As a result of that information the following resolution from the Hackney board of guardians was read:—

> The guardians having been informed that the hospitals committee of the Metropolitan Asylums Board have under their consideration a proposal to obtain a licence under the Vivisection Act for Joyce Green Hospital permitting experiments on animals, this board hereby strongly protests against the use of a rate-supported hospital for such purposes. That a copy of the foregoing resolution be forwarded to the Home Secretary, the President of the Local Government Board, and the metropolitan boards of guardians, with a request to the latter that when electing managers for the Metropolitan Asylums Board they will request them to oppose any attempt to use the hospitals of the Metropolitan Asylums Board for the purposes named in the resolution.

A motion to refer the letter to the hospitals committee for consideration and report was, after a heated discussion, lost and it was decided formally to acknowledge the communication.

THE SPOROZOA IN RELATION TO DISEASE IN MAN AND ANIMALS.

Professor E. A. Minchin resumed his lectures on the Sporozoa and in his sixth lecture[1] delivered at University College, London, on April 25th, dealt with the sub-class of the myxosporidia. These belong to a class different from the rest of the sporozoa dealt with in previous lectures. The myxosporidia are neosporidia—that is, forms in which spore formation begins early in life and goes on continuously during the trophic stage. Such spore formation is not an interruption of the vegetative life of the parasite whereas in the telosporidia (the other great group of sporozoa) spore formation is the end of the trophic stage. The spores are formed in the interior of the protoplasmic body, not on the periphery as in gregarinæ, hence they are called endospores. The myxosporidia comprise four families—viz., the disporea in which the parent form gives rise to only two endospores, the polysporea which produce more than two spores, the chloromyxidea, and the myxobolidea. The trophic stage of the myxosporidia is marked by a large-sized amœboid phase and the spores produced are also relatively large. With rare exceptions the spores possess two or four polar capsules each. These forms are parasitic in fishes and cold-blooded vertebrates (amphibia) but they are rare in invertebrates and not known to occur in any warm-blooded vertebrates. The parasites in fishes were first observed by the physiologist, Johannes Müller, who named them "psorosperms." They occur in two conditions—viz., freely in the internal cavities of viscera (the gall-bladder, the urinary bladder, and the pelvis of the kidney) and as tissue parasites within the parenchyma of the bodily organs. The latter form of infection of the host is the more serious and virulent of the two. It has been traced as the cause of epidemics among fishes in Germany. Thus Döflein and Hofer have shown that certain epidemics of fish disease recently observed in Germany—e.g., among barbel in certain rivers—were due to tissue infection by a species of myxobolus. The myxobolus Lieberkühnii, a yellowish slimy-looking sporozoon, is a parasite in the pike's bladder and was met with in nearly 50 per cent. of the specimens examined by Professor Minchin. It is comparatively harmless. The trophic stage of the parasite is amœboid in form with an elongated multinuclear worm-like sinuous body composed of a finely granular ectoplasm and a densely crowded granular endoplasm containing various particles—e.g., dark brown crystalloid bodies, oil and pigment droplets, and

[1] References to the first, second, third, fourth, and fifth lectures will be found in THE LANCET of March 12th, p. 738, and 26th, p. 889, April 2nd, p. 960, and 9th, p. 1009.

metaplasmic granules. The ectoplasm is the region which exhibits pseudopodial movement. Myxidium reproduces itself in the winter months by a process of budding, the buds which are constricted off being multinuclear. Spore formation occurs only in the warmer months of the year (endospores). This occurs by a process of encystment, the cell protoplasm within the cyst undergoing division into six or more spores (sporoplasmic bodies), each of which undergoes further subdivision into a pair of spindle-shaped bodies provided with "stinging cells" at each pole. A two-shelled protective envelope is secreted by the parasite which is now in a condition to infect a fresh host. This infection is generally of the "casual" form—i.e., produced by accidental swallowing or eating of the fish containing the parasite. When located within the alimentary canal of the new host the gastric juices loosen the shells and the little "amœbulæ" issue forth and attach themselves to, or invade, the tissues of the host. They are also carried by the lymph stream and may thus make their way into the kidneys, skin, and eye muscles. Thus a calf fed on the spores will be speedily infected by the amœbulæ which will make their appearance in the tissues and organs mentioned. In the tissues they undergo further multiplication by fission and finally the young myxosporidia imbed themselves in the tissues where they remain as ordinary parasites (trophozoites) for a more or less prolonged period. Occasionally they may give rise to serious disease or cause death of the host.

CHANGES IN THE SUPRARENAL CAPSULES IN CASES OF NEPHRITIS.

SOME interesting observations on the condition of the suprarenal capsules in cases of nephritis in which during life increased pulse tension was noticed are recorded in the *Tribune Médicale*, 1904, p. 119, by Dr. Aubertin and Dr. Ambert. In these cases they have found definite changes, both on naked-eye and microscopical examination, practically without exception. Eight of such cases in all were examined, while 19 cases of other diseases were studied as controls. In three of the eight cases large adenomata were found four, five, and eight centimetres in diameter respectively; in the remaining five cases the glands as a whole were larger and heavier than the normal standard. When cut into the cortical substance was found to be increased in thickness and to contain small adenomatous nodules. Histological investigation confirmed this, showing a true hyperplasia of the cortical layers; the medullary substance, on the other hand, took no part in this overgrowth; it was, in fact, somewhat atrophic. Even in the cases where the large adenomata occurred the remainder of the cortex of each gland was hypertrophied. In seven cases of renal disease without increased pulse tension no alterations were found in the suprarenal capsules; further, in 12 cases of various acute and chronic affections without increased pulse tension suprarenal changes were only found in one case; this was a case of tuberculosis with a slight degree of fibrosis of the kidneys in which a circumscribed adenoma was found, without any other change in the structure of the organ. As a result of these observations a relation was inferred to exist between the raised tension of the pulse in such renal cases and the changes in the suprarenal bodies. The explanation which Dr. Aubertin and Dr. Ambert offer of this relation is ingenious, though, perhaps, mainly speculative. Allowing that the normal suprarenal gland produces a substance in its medullary cells which increases blood pressure, they assume that the cortex produces an antagonistic body which they regard as also a protection against the effects produced by the retained toxic products in chronic renal disease. These hypothetical toxins they suppose produce increased blood pressure on the one hand and acute or chronic uræmic symptoms on the other. The hyperplasia of the cortex of the suprarenal they regard as an attempt on the part of the organism to antagonise these toxins. These observations, if confirmed, are certainly of great interest both pathologically and clinically considered, while the explanation is practically an instance of the supposed protective action from auto-toxication, a function which on other grounds some pathologists attribute to the suprarenals.

THE HYPODERMIC INJECTION OF CALOMEL: TRIBUTE TO ITS DISCOVERER.

ONE of our Italian correspondents writes: "Forty years ago in the clinique of the University of Pavia calomel was for the first time employed hypodermically in the treatment of disease and the practice, now general throughout Italy, especially in syphilitic affections, has amply realised the anticipations of its author, Professor Angelo Scarenzio, director of the Clinica Dermosifilopatica in the Lombard School. On the recurrence last month of the fortieth anniversary of the discovery the medical staff of the university celebrated the occasion by presenting their colleague with a gold medal bearing on the obverse a likeness of Professor Scarenzio in profile and on the reverse the following inscription:—

ANGELO SCARENTIO
Athenaei Ticinensis
Magistro Syphilopathiae perinsigni
Qui in lue Gallica curanda
Protochloretum Hydrargyrium
Subter cutem primus injecit
VII. ID. APRIL. MDCCCLXIV.
Collegae et Sodales
Ingenium Viri et Sollertiam admirantes
Die ejus inventi anniversario
A. MDCCCCIV.

The elegance of the Latinity, due to the pen of Professor Majocchi of Bologna, has its counterpart in the artistic beauty of the medal, equal in grace and finish to the best traditions of the studio from which it comes, that of Signor Johnson of Milan. The ceremony of consigning the medal was eminently 'simpatica' (to use the expressive Italian word), all the medical staff of the Lombard School being present, together with representatives of many other cliniques, foreign as well as Italian."

MENINGITIS IN MUMPS.

AMONG the rare complications of mumps is meningitis. At the meeting of the Société Médicale des Hôpitaux of Paris on March 25th M. A. Chauffard and M. L. Boidin described two cases of meningitis in mumps which are important because the existence of the complication was verified by lumbar puncture. A lad, aged 17 years, was admitted to hospital on Feb. 15th, 1904, the fourth day of an attack of mumps. Both parotid regions were swollen, rosy, and œdematous. The temperature was 100·7° F. On the following days the temperature fell to normal and the right parotid diminished progressively but the left (the last attacked) still remained large. On the night of the 19th the patient slept badly and complained of headache. On the 20th the temperature was 100·4°. Careful examination of the nervous and other systems revealed no cause for the headache and pyrexia; there were no signs of orchitis. On the 21st he still complained of slight headache and insomnia. The temperature was 101·8° in the morning and 101·3° in the evening but the pulse was only 56. On the 22nd the temperature was normal and the patient had slept and felt well. From the 22nd to the 26th he progressed towards convalescence but though the temperature was normal the pulse was from 56 to 60 and the patient progressively lost weight. On the 26th the parotid swelling had almost disappeared and the pulse was 80. In the second case a man, aged 36 years, noticed

on Nov. 24th that his neck was a little swollen. He had no pain and paid little attention to the condition which disappeared in two days. But on the 26th he felt acute pain in the scrotum which compelled him to remain in bed. On the 28th the pain extended to the lower abdomen and he was feverish. This condition persisted until Dec. 2nd, when he entered hospital. He was prostrated, the face was red and swollen, and the temperature was 106° F. He complained of acute pain in the scrotum. The right testicle and epididymis were much enlarged and the parotid glands were a little so. On the 3rd the temperature fell to 102° but the state of the testicle had not altered. There was no headache or other nervous symptom but the pulse was 68. On the 4th and 5th the testicle was less painful, the temperature was normal, and the pulse fell to 52. Atrophy of the testicle followed. In both cases a series of lumbar punctures were made. In the first case the puncture was first performed on the fourth day and yielded normal cerebro-spinal fluid. A second puncture, made on the ninth day (when there were headache, pyrexia, and slow pulse), yielded cloudy fluid containing numerous large lymphocytes. On the eleventh day similar but less cloudy liquid was obtained. On the nineteenth day the liquid obtained was clear but it still contained abundant lymphocytes. In the second case lumbar puncture yielded on the ninth and twelfth days clear liquid containing numerous lymphocytes. Lymphocytes in diminished numbers were found as late as the eighty-ninth day. The liquid obtained by puncture was never under pressure, fibrin was always absent, and the amount of albumin did not exceed the normal. It is to be noted that the most important signs of meningitis—rigidity of the neck, Kernig's sign, the "meningeal streak," vomiting, constipation, and ocular signs—were absent. On the other hand, there were in the first case symptoms of an attenuated form of meningitis—the relapse of the fever without any lesion to account for it, the headache sufficiently intense to cause insomnia for two nights, and the bradycardia. In the second case the supervention of orchitis rendered the diagnosis of meningitis less clear and explained the very high temperature. Perhaps headache was absent in consequence of the painful character of the orchitis. On the other hand, the bradycardia was well marked.

THE REVACCINATION BILL OF 1904.

As our readers are aware there is at present a Revaccination Bill before the House of Commons, but it is unfortunately not a Government Bill. Despite the promise which the Government gave about revaccination some years ago nothing has ever been heard of any Government Bill on the subject. This being so there is not much chance that the Bill will ever reach a second reading and all the more so as it was down for May 4th, the same day as the Southwark and Birmingham Bishoprics Bill which was bound to be fought tooth and nail by a certain section of the House. Mainly owing to the action of Mr. Bryn Roberts and Mr. Lloyd-George, who are consumed with anxiety to see the law obeyed (except indeed as regards the Education Act), the question as to whether Churchmen might spend money subscribed by themselves in supporting two Bishops was debated at such length that the Revaccination Bill never had a chance. The Imperial Vaccination League has, however, published a list of persons who support the Revaccination Bill, 1904. The list is contained in a pamphlet of 78 pages. We say nothing as to the medical men whose names are found therein, for in the eyes of opponents of the Bill medical men simply care for vaccination on account of the fees which it brings in and are notoriously biased on the subject. The manifesto, which the persons named in the list have signed, welcomes legislation "making revaccination at school age compulsory on all but the children of conscientious objectors or those who may be for a time excused on the ground of ill-health." Nearly every class of the population is represented in the list but all the signatories do not approve of the conscientious objector clause. Many large employers of labour have signed and petitions in favour of the Bill have been, or are going to be, presented to the House of Commons by the Herefordshire county council, the boroughs of Finsbury, Holborn, and the city of Westminster, the municipal corporations of Bootle, Bury, Manchester, Leamington Spa, Newcastle-upon-Tyne, St. Helens, Stoke-upon-Trent, Sunderland, and the Prescot union. We wish the Bill every success but we greatly fear that it will not attain it this year.

FESTIVAL DINNER OF THE MIDDLESEX HOSPITAL.

THE festival dinner in aid of the funds of the Middlesex Hospital and its cancer charity was held at the Whitehall Rooms, Hôtel Métropole, London, on May 3rd, the Right Hon. the Lord Mayor occupying the chair. During dinner, at which about 140 guests were present, the band of the Coldstream Guards performed an excellent programme of music by permission of Colonel A. E. Codrington. The Lord Mayor, in proposing the usual loyal toasts, referred to the generous interest taken by their Majesties the King and Queen in hospitals and charitable institutions in general and the Middlesex Hospital in particular, and in proposing the toast of "Continued Prosperity to the Middlesex Hospital" he spoke of the great demands which were made on the generosity of the charitable at the present time, three hospitals alone appealing for sums amounting together to £1,000,000. In pleading the claims of the Middlesex Hospital he referred especially to its cancer charity which has continued its excellent work for upwards of a century. He then read a letter from Lord Derby announcing a donation of £1000 to the dinner fund. The Right Hon. Lord Sandhurst, G.C.S.I., chairman of the weekly board, in replying to the toast summarised some of the improvements and advances made in the working of the hospital during the past ten years, referring to the opening of the new cancer wing with its separate organisation, to the convalescent home at Clacton, to the building of the new laundry at Hendon, to the new and commodious nursing home, and to the establishment of the clinical and cancer research laboratories and the electro therapeutical department. In paying a tribute to the work of Dr. W. S. Lazarus-Barlow, the director of the Cancer Research Laboratory, Lord Sandhurst referred to his appointment on the Cancer Research Committee of the German Government and stated that the principle of the institution was coöperation with other bodies concerned in cancer research, not competition. He concluded his reply with an appreciation of the work done by the permanent officials of the institution and then proposed the health of "The Medical Staff," coupling it with the names of Mr. Henry Morris and Dr. J. Kingston Fowler. Mr. Morris, in his reply, referred to the increased cost of surgical methods and apparatus and to the increase in conservative operations. Dr. Fowler, in replying on behalf of his medical colleagues, alluded to the necessity of the endowment of medical education and research and the importance of these as a national investment, a fact already recognised by some other nations. He further pointed out the disadvantage suffered by London schools in competition with those in the provinces where local patriotism led to endowment and general interest. The toast of "The Visitors" was proposed by Lord Grenfell of Kilvey, G.C.B., G.C.M.G., a vice president of the hospital, and responded to by Mr. J. W. Watson, Master of the

Worshipful Company of Mercers. Lord Sandhurst, in proposing the toast of "The Chairman," had the gratification of announcing that the subscriptions promised amounted to nearly £6000 and expressed the hope that this would be considerably increased before the list closed. The Lord Mayor, in replying, expressed the pleasure it gave him to preside and his gratification at the result.

THE GENERAL MEDICAL COUNCIL.

THE next session of the General Medical Council will begin on Wednesday, May 25th, at the office of the Council, 299, Oxford-street, London, W., Sir William Turner, K.C.B., the President, taking the chair at 2 P.M. In consequence of the Whitsuntide holidays the session will begin on a Wednesday instead of on the usual Tuesday.

A COURSE of ten advanced lectures on the Tracts of the Brain to be given on Wednesdays, at 5 P.M., in the Physiological Theatre of University College, London, has been commenced by Dr. W. Page May. The introductory lecture upon the Structure and Tracts of the Cord was delivered last Wednesday (May 4th). The syllabus of the remaining nine lectures is as follows: Lectures 2 and 3, Topography of the Brain Stem; Lecture 4, Motor Paths; Lecture 5, Sensory Paths; Lecture 6, Basal Ganglia, Thalamus and Corpus Striatum; Lecture 7, Cortex, Localisation, Association; Lecture 8, Cranial Nuclei and their Central Connexions; Lecture 9, Optic Nerve and its Connexions; and Lecture 10, Smell and Hearing. The lectures are open without fee to all internal students of the University of London.

AT a coroner's inquest held at Birkenhead on April 13th and 20th a verdict was returned against Mr. K. McD. O'Callaghan of culpable negligence as regarded his treatment of a woman named Alcock whom he had been called in to attend six hours after the birth of a dead and decomposed child. Mrs. Alcock died from septicæmia. The charge was heard before the magistrates on April 28th and after hearing the evidence for the prosecution the bench discharged the accused. Mr. O'Callaghan, however, still has to take his trial at the assizes on the coroner's warrant. Mrs. Alcock had been attended in her confinement by an uncertificated midwife.

THE May dinner of the Aberdeen University Club in London will be held in the Trocadéro Restaurant, Shaftesbury-avenue, London, W., on Wednesday, May 18th, at 7.30 P.M. Intending diners should communicate with Mr. J. Malcolm Bulloch or Dr. Robert J. Collie at 25, Porchester-terrace, London, W.

Dr. J. Rose Bradford will deliver the Croonian lectures at the Royal College of Physicians of London on Tuesdays and Thursdays, June 7th, 9th, 14th, and 16th, at 5 o'clock. He has taken as his subject, "Bright's Disease and its Varieties."

THE seventh annual meeting of the Childhood Society will be held at 7, St. James's-square, London, S.W., on Wednesday, May 11th, when an address on Degeneracy, Physical, Mental, and Moral, will be delivered by Dr. G. E. Shuttleworth.

A TELEGRAM from the Acting Governor of Hong-Kong received at the Colonial Office on May 3rd states that for the week ending April 30th there were 25 cases of plague and 25 deaths from the disease.

THE annual general meeting of the Medical Defence Union will be held at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, London, W., on May 26th, at 5 P.M.

THE BACTERIOLOGY OF THE THAMES, OF THE SEA, AND OF SHELL-FISH.

FIRST NOTICE.

THE importance of being able to determine accurately the precise significance of the organisms found in shell-fish and in estuarial waters cannot well be overstated. On the one hand, the absence among the public of certain diseases borne by shell-fish is at stake; and, on the other hand, the livelihood and hence in no small measure the health and well-being of a large littoral population are in the balance. Moreover, the general subject has a wide scientific interest. As we have already stated in our columns when dealing with the fourth report of the Royal Commission on Sewage Disposal, the Commissioners did not consider that the bacteriological examination either of sea water or of shell-fish, "even if carried out in a quantitative as well as a qualitative manner," could at present be recommended for the purpose of distinguishing unsafe foreshores, layings, ponds, and the like. They thought, however, that the results so far obtained showed great promise. The report upon which this conclusion was largely based has now been published in the shape of an elaborate appendix to the fourth report of the Commissioners and the author of this work is Dr. A. C. Houston.[1]

This report, if we mistake not, is destined to become a classic in bacteriological literature inasmuch as it approaches the subject from a thoroughly unbiased and scientific standpoint and in this sense it will serve to rescue the bacteriology of estuarial waters and of shell-fish from the somewhat unsatisfactory state into which it has recently fallen by the anxiety of certain bacteriologists to generalise rather too widely from the very limited facts at their disposal. The report under review consists of a folio volume of 316 pages together with numerous charts, tables, and maps illustrating the bacterial contents of the waters examined, the biological characters of the organisms discovered, and the precise position geographically from which the several samples were procured. The term "B. coli" as used by Dr. Houston includes all gas-forming bacillus coli-like organisms and the biological characters of the microbes are given in tabular form. The word "communis" in connexion with bacillus coli has been avoided by Dr. Houston for the reason that, in his view, this word, if unaccompanied by any definite statement as to the tests employed and the results obtained, is apt to be misleading, whereas if all the details with regard to the subcultures are furnished the employment of the word "communis" is unnecessary. It is therefore quite open to anyone who may wish to speak in terms of bacillus coli communis to analyse Dr. Houston's tables and to arrive at his own conclusions. This course has undoubted advantages having regard to the fact that there is apparently some difference of opinion among bacteriologists as to the precise significance of the several tests which are used by one or other bacteriologist to differentiate bacillus coli communis from bacillus coli-like organisms. As regards bacillus enteritidis sporogenes the test employed by Dr. Houston was based upon the smallest amount of the sample which yielded the "enteritidis change" in anaerobic milk cultures for spores. Section I. of the report deals with

The Condition of the River Thames at Hampton and Sunbury above the Tidal Portion of the River and above the Intakes of some of the London Water Companies.

Here the water contained from ten to under 100 bacilli coli per cubic centimetre and one spore of bacillus enteritidis in ten cubic centimetres and from these results Dr. Houston infers that the Thames at Sunbury and Hampton is composed of "extremely dilute sewage"—that is to say, sewage diluted about from 1000 to 10,000 times—and it may be added that the bacilli coli found "were rarely other than typical B. coli as freshly isolated from human fæces." Dr. Houston has obviously misgivings as to the desirability of using such

[1] Vol. iii. of Fourth Report of Royal Commission on Sewage Disposal, containing reports by Dr. Houston on Bacteriological Investigations. Eyre and Spottiswoode. Price 10s. 10d.

water as this for drinking purposes even after filtration and he discusses the potential dangers to which London is exposed from what may be called the risks attendant upon of filtration. Some will agree with him that too much importance must not be placed upon the immunity of London from enteric fever in the past; others may think that he attaches insufficient weight to the testimony of experience. But whichever view they take they will have read a very interesting discussion.

Dr. Houston next turns his attention to the lower Thames and he tells us that the 232,000,000 gallons of effluent which are daily discharged at Barking and Crossness contain at least 100,000 bacilli coli and between 100 and 1000 spores of bacilli enteritidis per cubic centimetre, while the sludge, 50,000 tons of which are taken weekly to the Barrow Deep, contains bacilli coli in numbers varying from 1,000,000 to 10,000,000,000 per cubic centimetre and bacilli enteritidis from 10,000 to 100,000 per cubic centimetre. There was, however, one sample of sludge which was strongly alkaline and which yielded negative results as regards both organisms. Dr. Houston did well to record this anomaly as it serves to accentuate the importance of taking multiple samples of any given material before arriving at a conclusion. The river at Barking and Crossness is regarded as sewage diluted about 100 to 1000 times, but the bacilli coli collected near Crossness were less "typical" than those collected near Barking inasmuch as several samples of the former either gave no indol reaction or caused no clotting in milk, while two samples failed both as regards the indol and clot reactions. This departure from the "typical" is of interest.

When the water of the Thames at Purfleet, five miles below Crossness, was examined the results were very similar to those obtained at Barking and Crossness, but there would seem on the whole to have been a further departure from the "typical"—i.e., eight of the samples examined failed to respond both to the indol and the clot test. At Grays, which is five miles below Purfleet, the conditions were appreciably better, the number of bacilli coli per cubic centimetre being on an average over 100 but less than 1000, while the spores of bacillus enteritidis varied from one to ten per cubic centimetre, but here there appeared to be no further departure from the "typical."

The next examination was made at Mucking, ten miles below Grays, where the average number of bacilli coli per cubic centimetre was ten and that of bacillus enteritidis sporogenes usually one. As regards these results Dr. Houston remarks that the Thames at Mucking was on a basis of bacteriological findings as suitable for waterworks purposes as it is at Sunbury or Hampton. This is a somewhat remarkable result and it shows how overdrawn have been some of the pictures relative to the condition of the lower Thames and the pollution of its foreshores.

At the Chapman lighthouse, five miles lower down than Mucking, although excremental bacteria could still be detected the results are regarded by Dr. Houston as very satisfactory. Here, however, the ratio of the bacillus coli-like microbes to the spores of the bacillus enteritidis became altered and in certain of the samples the spores of this latter organism were more numerous than the bacillus coli-like organisms. Seemingly the more delicate bacilli coli perish, while the resistant spores are able to survive.

The Condition of the Water in Barrow Deep.

Numerous allegations have been made with regard to the disastrous consequences of depositing the London sludge in this locality, and the whole mouth of the Thames, together with the Whitstable oyster fisheries, have been regarded as having been poisoned thereby. It is therefore eminently instructive to turn to Dr. Houston's report and to hear what is the testimony of the bacteriologist upon the subject. It may be noted in passing that the entrance to the Barrow Deep is about 13 miles seawards of the Nore and 48 miles from Crossness and it may be well to remind the reader that the 50,000 tons of sludge which are deposited weekly in the Barrow Deep contain from 1,000,000 to 10,000,000,000 bacilli coli per cubic centimetre and from 10,000 to 100,000 spores of bacillus enteritidis in the same amount. Dr. Houston's samples were apparently collected near the surface and they yielded bacilli coli from none in 10 cubic centimetres to 10 per cubic centimetre, while about half the samples gave a positive result with bacillus enteritidis sporogenes in one cubic centimetre of the water. Dr. Houston accounts for these remarkable results by supposing that the microbes sink gradually to the bottom and there undergo dissolution. But be the explanation what it may, it is impossible not to agree with Dr. Houston when he says "the results of the bacteriological analysis do not substantiate the alleged *gross* pollution of the Thames estuary and the Essex and Kentish coasts (east of a line connecting the Chapman lightship with Stoke) due to the discharge of chemically treated sewage into the Thames at Barking and Crossness and sludge into the Barrow Deep. On the contrary, the results appear to indicate that outside the Barrow Deep and beyond the Chapman lighthouse the excremental bacteria derived from the sludge and effluents respectively must be present in such small proportion in the sea water as, practically speaking, to be almost if not quite negligible. The statements which have been made to the contrary appear to have been based on conjecture." It would be instructive to compare these results with the examination of samples taken in Barrow Deep some distance below the surface and at the bottom of the sea.

Dr. Houston deals next with—

The Bacteriological Examination of the London Filtered Water,

as the Commission desired to obtain some results in this direction for purposes of comparison. Samples of water were taken from the *mains* of the East London and Southwark and Vauxhall companies and the results are, as usual, arranged in tabular form in the report. As, however, time and opportunity did not allow this matter to be gone into at all fully Dr. Houston advises that provisional inferences only should be drawn from the results. As regards the bacillus enteritidis sporogenes only one out of all the samples examined yielded a positive result with ten cubic centimetres of the water, but the results as regards the bacillus coli are regarded as the reverse of satisfactory, although many of the bacillus coli-like organisms were not completely typical of the bacillus coli. But, notwithstanding this, altogether typical bacilli coli were found in 1, 10, or 100 cubic centimetres of the water.

Dr. Houston points out that the bacillus coli is an index of excremental but not of specific pollution; he, however, conceives that "a fortuitous chain of circumstances might convert a potential into an actual and menacing danger to health." He pictures to himself the simultaneous existence of an epidemic of enteric fever in the towns of the valley of the Thames above the intakes and a breakdown of the filters. Were this to occur the result might undoubtedly be serious or even disastrous. But Dr. Houston is nothing if he is not absolutely fair and he adds, as if anxious to tone down the impression which he has produced, "it is not desirable to push unduly the question of *potential* danger to health," and after pointing out that filtration must be regarded as a relative rather than an absolute safeguard, he observes that the results which he has obtained "might fairly be used as an argument against condemning water owing to the mere presence of B. coli or gas-forming bacillus coli-like microbes, as has been the practice in the past to a large extent irrespective of their relative abundance in the samples, seeing that in this instance water was being drunk without obvious detriment to health which uniformly contained B. coli or bacillus coli-like microbes in 100, in 10, and sometimes even in 1 c.c."

With this quotation we must terminate our first notice of this highly interesting volume. In our second and concluding notice we shall draw attention to Dr. Houston's experiments as to the fate of the bacillus pyocyaneus when introduced with sewage into certain biological purification processes and to his bacteriological examinations of unfiltered sea water and of water and oysters obtained from certain localities on the littoral.

MEDICINE AND THE LAW.

The Substitution of Fish Oil for Cod-liver Oil.

AT Southwark police-court a herbalist named Lardent was fined £1 with £10 10*s.* costs under the Sale of Food and Drugs Act for selling, to the prejudice of the purchaser, "cod-liver oil" which was shown by analysis to contain at least 90 per cent. of fish oil. Evidence was given of the serious aspect of such substitution in the case of so useful and widely used an article as cod-liver oil, taking into account the not only useless but detrimental qualities of fish oil. For the defence it was urged that both

the defendant and the wholesale firm who had supplied him had purchased the oil as cod-liver oil, and a representative of the wholesale firm gave evidence in corroboration of this. It was pointed out in the course of the case that the bottle containing the stuff bore the inscription "Pure Selected Cod-liver Oil." The wholesale value of cod-liver oil was given as 15*s.* 2*d.* per gallon and that of fish oil as 2*s.* 2*d.* The large profit which can be realised by successful fraudulent dealing in such an article shows that those purchasing it wholesale would do well to ascertain personally the nature of what they buy and not to put implicit faith in guarantees of quality without demanding that they have been founded upon analysis. To rely upon such guarantees for a defence when other persons have made the analysis is scarcely prudent, even if the merchant only consults his own interest and disregards that of the public. The public, no doubt, regard a printed label of "Pure Selected Cod-liver Oil" as a guarantee and are not likely to be protected by any vigilance or science exerted on their behalf by the "herbalist," but substantial penalties inflicted in cases of the nature of that described may have some effect in relegating the sale of such goods as cod-liver oil to druggists who are the proper persons to deal in them.

METROPOLITAN STREET AMBULANCE ASSOCIATION.

A GENERAL meeting of the Metropolitan Street Ambulance Association was held at 20, Hanover-square, London, W., on May 2nd, the chairman being Mr. REGINALD HARRISON who in his opening remarks said that the Metropolitan Street Ambulance Association had been founded in January, 1904, by some members of the medical profession practising in London, who appointed a president and council to initiate its proceedings. The objects of the association were to endeavour to secure for London, with as little delay as possible, an efficient street ambulance service for accidents and medical casualties and, further, to promote the movement generally in various ways. That action had been taken not with any idea of undervaluing or supplanting efforts that had been made by persons and bodies to promote and to provide ambulance work, but, on the contrary, the association had all along recognised the importance of the voluntary work that had been done, particularly by the St. John Ambulance Association, and by Mr. H. L. Bischoffsheim, in addition to the first-aid services rendered by the Metropolitan and City police. The association, however, felt that the influence of a large and united body of the medical profession, practically acquainted by daily observation with existing ambulance services for the streets and holding definite views as to how these might be improved, was likely to afford valuable assistance to the authorities of the metropolis and the country in bringing arrangements relative to that important subject to a definite issue. Within a short time after its formation more than 1000 members of the profession, engaged in hospital and private practice, had joined the association on those broad lines and they were met together for the purpose of giving effect to the programme thus announced and so warmly responded to. If further testimony in support of the objects of the association was required it would be found in the words of Sir E. C. Perry of Guy's Hospital, in his report to the London County Council, "That it was very painful to watch the arrival of accidents at hospitals under the present system," and also in the statement of Sir W. J. Collins, chairman of the ambulance subcommittee, in his prefatory note to the same report, "That nearly 70 per cent. of the casualties at present conveyed to hospitals by some vehicle or other are taken in cabs and carts and not in ambulances." On that latter basis it had been calculated that from 8000 to 10,000 severe accidents were taken to London hospitals and elsewhere annually in cabs or other unsuitable conveyances. It had to be remembered that those figures mainly represented persons constituting a large mass of the population—artisans and labourers—who were the most liable by reason of their occupations to sudden accidents: those, in fact, who were least able to provide against emergencies of that kind and who, along with their families and dependents, suffered the more when thus overtaken and especially when, from lack of proper attention at the time of the accident, their recovery and wage-earning power were unnecessarily delayed. On the other hand, it was not to be forgotten entirely that the well-to-do citizen of Greater London might in like manner be suddenly struck down and rendered unconscious in the street and thus have cause to remember with gratitude the preservation of his life or limb by the timely arrival of a well-equipped ambulance at the moment when the bystanders were wondering who he was and where he came from. The present state of the London streets by the large addition of "motor" and tram traffic was not calculated to lessen those liabilities. Relative to those statements he would say that about 1881, in connexion with the movement which resulted in the introduction of hand ambulances and subsequently of horse ambulances into Liverpool, he had made some extended observations as to what really happened to persons who "were brought to hospitals in cabs and carts and not in ambulances." He (Mr. Harrison) was at that time resident surgeon, and subsequently visiting surgeon, to one of the largest hospitals in that city which received annually many hundred accidents from the docks, city, and suburbs. He found that a large proportion of the fractures involving limbs which were originally simple had been rendered compound by improper methods, or the absence of methods, of removal to hospital, and, further, that where the injury or medical casualty had been attended with much shock, such, for instance, as in concussions caused by falls down a ship's hold or from aloft, in cases of severe burns and scalds, or by apoplectic, cardiac, and other seizures by which persons were suddenly rendered more or less unconscious, the conveying of them in cabs or carts in a sitting position had been not infrequently followed by speedy death after their arrival at the hospital. The deaths of patients on their way to the hospital and within 24 hours after admission were often associated with that mode of conveyance. Thus an unnecessary loss of both limb and life could be accounted for. The almost entire absence of provision of horse or motor ambulances for street accidents in London also called for comment. Without those conveyances no system for a large city could be regarded as even approaching a state of efficiency. The number of horse ambulances required for the metropolitan area could not at present be determined and must be the result of experience. New York, with its population of over three and a half million people, seemed efficiently worked with about 56 of those conveyances. Though a proportion of street accidents in the immediate vicinity of hospitals were dealt with by hand ambulances or litters which were often used for other police purposes there could be no doubt that they compared unfavourably with the horse or motor conveyance which was a necessity when the distance to the hospital was greater. Minutes, not to speak of seconds, were of the first importance, relative to antiseptic treatment, when a wound was present. Women who had met with accidents or other casualties in the streets had often complained very bitterly of their recollections of the hand ambulance and their transit along crowded streets, though under the protection of the police. Contrast that with their unobserved removal in a comfortable and smooth-running horse ambulance with a trained attendant by their side. The street ambulance service of London at the present time might be said to be carried on partly by the police, as representing what was generally known as "first aid," and partly by volunteer efforts. Whether a much divided authority was desirable, which that arrangement implied, without any guarantee for the continuance of efforts which were purely voluntary, was a matter deserving consideration. Whatever conclusion might be arrived at in reference to that point it was obvious that the time had come when a central or undivided authority which could bring into unison the various constituent parts of an ambulance had become a necessity so far as London was concerned. The constituent parts of an ambulance included the police as "first aid" on the spot, the telephone, the conveyance and its motor power, the hospital or ambulance depôt, and, if necessary, the skilled medical attendant with some appliances, all capable of concerted action for one object with as little delay as possible. When London could secure those conditions there would be no difficulty in providing it with an efficient and complete ambulance service. The chairman then called upon the secretary to state what steps had already been taken.

Dr. ARTHUR W. JAMES, the honorary secretary, said

that the late London County Council had done much to forward the ambulance movement by the appointment of a subcommittee, under the chairmanship of Sir William Collins, and had issued a very valuable report in 1902. In consequence, it had been suggested, of the apparent indifference of the public no further steps had been taken in the matter. In those circumstances the Metropolitan Street Ambulance Association had been formed in order to secure the sympathy of all candidates for election to the new council and to interest the electors in a subject which so closely concerned every individual in the community. 110 medical men were appointed to act in the 58 constituencies as local honorary secretaries and these and their friends worked with great success everywhere. Letters explaining the objects of the association were sent to all the candidates with postcards for reply asking each, "If elected to the London County Council will you interest yourselves in securing the establishment by the Council of an efficient street ambulance service for London?" Favourable answers were received in almost every case, the few exceptions being afterwards found chiefly among the unsuccessful contestants. Of the 118 newly elected councillors more than 104 were well disposed towards the movement and most of them knew that they could rely on the support in that matter of their constituents as well as of practically the whole medical profession in the metropolis. Many of those representatives were grateful for the manner in which that association brought the subject forward, as it was well known that no public body could establish an ambulance service in London without first obtaining the sanction of Parliament. It appeared to be recognised generally that the community as a whole was responsible for caring for, and properly removing, those cases of accident and sudden illness which became helpless in the public streets, though there was still some difference of opinion as to which representative body should undertake the necessary provision and administration. Their association was confident that the London County Council would accomplish that work better than any other central or local governing body, because of its representative constitution and because it appeared to have ready at hand such an efficient emergency service as the fire brigade. That brigade, with its 90 stations and resourceful staff of 1350 men, already possessed almost all the administrative machinery necessary and seemed to need little more than the addition of the required ambulances, horses, and men to make it an ideal ambulance service also. That addition of more men, especially in the smaller stations, would in all probability contribute greatly to the efficiency of the brigade, since just as firemen were now instructed in first aid work, so those primarily employed in the ambulance service could be practised in fire-drill and the two staffs made to a great extent interchangeable. In that manner both those emergency services would be mutually helpful, more efficient in consequence, and considerably more economical for London than any other arrangement. It was worthy of note that in Liverpool, which had the best street ambulance service in England and where the police, the fire brigade, and the ambulance services were all under one management and worked together, the fire brigade machinery had been utilised for ambulance purposes. The drivers of the fire-engines were the drivers of the ambulances and the fire-alarm posts had been used for ambulance calls without any inconvenience. Those points, which appeared worthy of consideration, induced the council of their association to make the following suggestions as the possible basis of a plan for providing London with an efficient street ambulance service. 1. That there should be one controlling authority responsible for a uniform and well-organised ambulance service and that the London County Council, as the central representative body for the metropolis, was the one best fitted to undertake the work. 2. That London should be divided into districts or "accident areas" and a properly organised ambulance service arranged in each. This would necessitate the establishment of horse or motor as well as hand ambulances. 3. That the fire brigade and the ambulance services could be most advantageously carried out conjointly. 4. That it was desirable that some of the ambulances under the control of the London County Council fire brigade should be stationed at, or in immediate connexion with, the principal London hospitals. 5. That the police should be kept efficient in first-aid training and should be available, as at present, for rendering first aid to the injured, for summoning an ambulance, and for taking charge of the patient until the ambulance and attendant arrived, but should not necessarily be expected to accompany a patient to home or hospital. 6. That the 1000 fire-alarm telephone posts now existing and all other telephones should, if possible, be made available for calling the ambulances and the police should be instructed in their use. 7. That the experience gained in working such services for many years in New York, New Orleans, Chicago, Sydney, Copenhagen, Vienna, Paris, Liverpool, Bootle, Birkenhead, Manchester, Newcastle, Huddersfield, Bolton, Burnley, Hull, Sheffield, Leeds, and Wolverhampton was more than sufficient to justify the London County Council in undertaking the work in the metropolis on a scale large enough to provide adequately for the 13,000 to 15,000 street casualties requiring removal each year. 8. That there should be no charge for the use of the ambulance.

Dr. F. W. COCK said that from his experience of about 1000 ambulance calls at a New York hospital he was of opinion that in many surgical and medical cases much harm might have resulted if the patients had been brought to the hospital in the haphazard manner adopted in London. From 35 to 40 per cent. of the calls were for medical cases, the remainder being surgical. The ambulance was in the charge of hospital authorities but it had to be remembered that in New York the hospitals were more widely distributed than in London. In New York they were accustomed to see a medical man accompanying the ambulance but he did not think that that was necessary in London.

Sir WILLIAM S. CHURCH, President of the Royal College of Physicians of London, then proposed the following motion:

That this association, having considered the present condition of ambulance provision in London for dealing with cases of accident and sudden illness in the streets and public places, is of opinion that there is urgent need of organisation under one body of an improved ambulance service, summonable by telephone, and provided with more rapid transport.

He said that there was great need for improvement in London of the ambulance provision for dealing with cases of accident and sudden illness in the streets and public places. The metropolis in this matter was behind many of the larger provincial towns of England. The association did not propose to initiate any scheme of its own but sought to combine the existing agencies so that they should act harmoniously and under central control. It was considered that the fire brigade was the best body with which an ambulance service should be united for the reason that such a scheme would be the most economical to adopt. Speaking as a physician he knew from experience that the present system by which many of the patients were brought to the hospitals in cabs did not in a great number of the cases give them the best chance of recovery.

Mr. TIMOTHY HOLMES, consulting surgeon to St. George's Hospital, in seconding the motion, agreed with the necessity for an improved ambulance service for the numerous accidents and cases of sudden illness that occurred in the streets of London. Under the present condition of things they must try to arrange for the conveyance of cases of accident or sudden illness to the hospitals as safely and as quickly as possible.

The motion was then put to the meeting and carried unanimously.

Mr. JOHN TWEEDY, President of the Royal College of Surgeons of England, then proposed the following motion:—

That, having regard to the excellent ambulance services organised by municipal authorities elsewhere, this meeting is of opinion that the London County Council is the body by which such service should be provided and maintained.

He said that there was no body so competent as the London County Council to undertake the scheme. The London County Council was not unfavourable to the proposal and it was incumbent on those present to take care that public indifference should not be allowed to continue. The sympathy of the public must be stimulated and the medical profession must give expression to a united opinion that some improved system was necessary. There was no intention to dictate to the London County Council but the suggestion was made that the fire brigade seemed to be the best organisation to carry on the work, because it would provide the material and the *personnel* required for the efficient performance of the duties which would devolve on the ambulance service which they desired to see in London.

Sir ALFRED COOPER, Vice-President of the Royal College of Surgeons of England, seconded the motion which was then put to the meeting and carried unanimously.

Sir THOMAS BARLOW, physician to His Majesty's Household, then proposed the following motion:—

That the foregoing resolutions be communicated to the London County Council by deputation and that the officers of this association be requested to arrange for the coöperation and support of other representative associations and persons for this purpose.

He said that it must be evident to everyone that the ambulance service should be in the hands of a central official body with the power of levying taxes so that they could see that the work was properly done. Excellent as the various voluntary bodies were that interested themselves in the matter it was obvious that they were not adequate to discharge the important and vital duties that lay before them. The London County Council was the right body to undertake the duty and the medical profession should render every assistance to the London County Council. Any sanitary work that the London County Council had taken up had been well done and in his opinion the Council would perform its duty in regard to the ambulance service in a proper manner.

Mr. W. THORBURN (Manchester) said that in his town the ambulance service was entrusted to the City Council and the details were arranged by the Watch Committee which combined some of the functions of the police and the fire brigade. The fire brigade found the horses and the police force found the men. The improved ambulance service had been of the utmost value and had been the means of saving much misery and suffering.

Mr. G. H. MAKINS, surgeon to St. Thomas's Hospital and late consulting surgeon to the South African Field Force, in formally seconding the motion, said that it rested with the medical profession to impress on the public the importance of the movement which the association had at heart. The ambulance service was an emergency service and so also was the fire brigade and if the two could be worked on the lines suggested there was no doubt that it would result in great advantage to the public.

The motion was then put to the meeting and was carried unanimously.

Sir DYCE DUCKWORTH moved, and Mr. JOHN H. MORGAN seconded, a hearty vote of thanks to Mr. Reginald Harrison for presiding, which was passed with acclamation and this vote having received a suitable response the meeting terminated.

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 6, 1826.

The fact that certain vegetable substances produced an enlargement of the pupil was long ago observed, even so far back as the time of Pliny, who mentions the circumstance, and ascribes that effect to the anagallis. He says "Pupillas dilatat; ideoque solent inungi, quibus fit paracentesis."

From this observation it would appear, that the needle operation for cataract as at present performed is similar to what it was in his day. It was not, however, until the year 1799, when Himly, who is now Professor of Physic at the University of Gottingen, published a tract on the "paralysis of the iris, produced by the application of hyoscyamus to the eye," that the practice was known generally, and he is entitled to the merit of having drawn the attention of the profession to the subject. Whether hyoscyamus is preferable or not is doubtful; its influence on the iris is less powerful and more temporary, than that of the belladonna. It is however, recommended in Himly's tract, and generally used by the Germans, who are afraid of the more powerful belladonna, fancying that it injures the retina. Himly's tract was published in the French at Altona, under the title "De la paralysie de l'iris." You will find a good account of the circumstances connected with this subject, historical as well as practical, in the 11th vol of the Edinburgh Medical and Surgical Journal, by Mr. Wishart. Himly has the merit of first seeing and clearly explaining the practical utility of this artificial dilatation, in various states of the eye. It is so important in internal inflammations, by preventing contraction of the aperture; in the distinction of cataract from other affections; in discriminating the several species of cataract; in facilitating some of our operations; in contractions of the pupil; and in many cases of leucoma, that this discovery of Professor Himly may be deemed an important epoch in ophthalmic surgery.[1]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8844 births and 4785 deaths were registered during the week ending April 30th. The annual rate of mortality in these towns, which had been 18·4, 17·6, and 16·0 per 1000 in the three preceding weeks, rose again last week to 16·3 per 1000. In London the death-rate was 15·6 per 1000, while it averaged 16·7 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 7·5 in Reading, 8·3 in Willesden, 8·7 in Handsworth (Staffs.), 9·4 in Hastings, 9·7 in Ipswich and in Halifax, 9 8 in Walthamstow, and 9·9 in Leyton; while the highest rates were 20·8 in Wigan, 20·9 in Warrington, 21·0 in Plymouth, 21·8 in Liverpool, 21·9 in Coventry, 22·0 in Stockton-on-Tees, 22·7 in Middlesbrough, and 25·9 in Wallasey. The 4785 deaths in these towns last week included 527 which were referred to the principal infectious diseases, against 583, 530, and 556 in the three preceding weeks; of these 527 deaths 213 resulted from whooping-cough, 155 from measles, 49 from diphtheria, 41 from diarrhœa, 40 from scarlet fever, 21 from "fever" (principally enteric), and eight from small-pox. No death from any of these diseases was registered last week in Hastings, Reading, Northampton, West Bromwich, Smethwick, Grimsby, Preston, or York, while the highest death-rates from the principal infectious diseases were recorded in Hornsey, Great Yarmouth, Walsal, Birmingham, Wallasey, Warrington, Salford, and Stocton-on-Tees. The greatest proportional mortality from measles occurred in Hornsey, Brighton, Norwich, Wallasey, Manchester, Burnley, Rotherham, and Rhondda; from scarlet fever in Warrington; from diphtheria in Hanley and Barrow-in-Furness; and from whooping-cough in Great Yarmouth, Walsall, Birmingham, Warrington, Bolton, Salford, Blackburn, and Stockton-on-Tees. The mortality from "fever" and from diarrhœa showed no marked excess in any of the 76 large towns. Of the eight fatal cases of small-pox in registered in these towns last week three belonged to London, two to Halifax, and one each to Manchester, Newcastle-on-Tyne, and Tynemouth. The number of small-pox cases remaining under treatment in the Metropolitan Asylums hospitals, which had been 134, 144, and 123 on the three preceding Saturdays, had further declined to 104 on Saturday last, April 30th; 12 new cases were admitted during last week, against 25, 37, and 23 in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1541, against 1505, 1523, and 1543 at the end of the three preceding weeks; 185 new cases were admitted during the week, against 141, 172, and 210 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 333, 295, and 254 in the three preceding weeks, further fell last week to 224 and were 60 below the number in the corresponding period of last year. The causes of 65, or 1·3 per cent., of the deaths in the 76 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Salford, Leeds, Hull, Newcastle-on-Tyne, and in 45 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, St. Helens, Manchester, Rochdale, Burnley, Halifax, Sunderland, Gateshead, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 20·3, 20·9, and 21·0 per 1000 in the three preceding weeks, declined again to 20·0 per 1000 during the week ending April 30th but was 3·7 per 1000 in excess of the mean rate during the same period in the 76 large English towns. Among these Scotch towns the death-rates ranged from 15·6 in Leith and 17·2 in Greenock to 22 3 in Paisley and 24·2 in Dundee. The 663 deaths in these towns included 22 from whooping-cough, 19 from measles,

[1] Excerpt from lecture on the Anatomy, Physiology and Diseases of the Eye, by Mr. Lawrence, delivered at the London Ophthalmic Infirmary, Moorfields.

13 from diarrhœa, seven from diphtheria, four from "fever," three from small-pox, and three from scarlet fever. In all, 71 deaths resulted from these principal infectious diseases last week, against 57, 65, and 79 in the three preceding weeks. These 71 deaths were equal to an annual rate of 2·1 per 1000, which was 0·3 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The deaths from whooping-cough, which had been 19, 20, and 29 in the three preceding weeks, decreased again to 22 last week and included six in Edinburgh, six in Aberdeen, five in Glasgow, and five in Dundee. The fatal cases of measles, which had been 14, 21, and 26 in the three preceding weeks, declined again last week to 19, of which ten were registered in Glasgow, three in Paisley, two in Dundee, and two in Greenock. The fatal cases of diarrhœa, which had been seven, 15, and 11 in the three preceding weeks, rose again to 13 last week and included eight in Glasgow and two in Dundee. The seven deaths from diphtheria were six in excess of the number in each of the two preceding weeks, and included five in Glasgow. The fatal cases of "fever," which had been three, four, and five in the three preceding weeks, declined again last week to four, of which two occurred in Glasgow. The three deaths from small-pox corresponded with the number in each of the two preceding weeks and were all registered in Glasgow. The fatal cases of scarlet fever, which had been two, one, and four in the three preceding weeks, declined again last week to three, and included two in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 138, 152, and 115 in the three preceding weeks, rose again to 121 last week, but were slightly below the number in the corresponding period of last year. The causes of 24 or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 29·7, 24·4, and 23·3 per 1000 in the three preceding weeks, further declined last week to 20·8 per 1000. During the past four weeks the death-rate has averaged 24·6 per 1000, the rates during the same period being 16·7 in London and 18·4 in Edinburgh. The 151 deaths of persons belonging to Dublin registered during the week under notice showed a decline of 18 from the number in the preceding week and included eight which were referred to the principal infectious diseases, against 19, 17, and ten in the three preceding weeks; of these, three resulted from whooping-cough, two from measles, one from diphtheria, one from "fever," and one from diarrhœa, but not any from small-pox or from scarlet fever. These eight deaths were equal to an annual rate of 1·1 per 1000, the death-rates last week from the principal infectious diseases being 1·7 in London and 1·4 in Edinburgh. The fatal cases of whooping cough, which had been eight, 11, and five in the three preceding weeks, further declined last week to three. The deaths from measles, which had been four, four, and three in the three preceding weeks, decreased to two last week. The 151 deaths in Dublin last week included 27 among children under one year of age and 40 among persons aged 60 years and upwards; the deaths both of infants and of elderly persons showed a slight decline from the respective numbers recorded in the preceding week. Three inquest cases and two deaths from violence were registered, and 51, or more than a third, of the deaths occurred in public institutions. The causes of two, or 1·3 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy Inspector-General of Hospitals and Fleets Evelyn Richard Hugh Pollard has been promoted to the rank of Inspector-General of Hospitals and Fleets in His Majesty's Fleet (dated March 7th, 1904).

In accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Surgeon Gerald Burton Brown has been placed on the Retired List (dated April 27th, 1904).

The following appointments are notified:—Fleet Surgeons: W. E. Bennett to the *Wild Swan* on commissioning; J. M. Rogers to the *President* for three months' hospital course; J. L. Thomas to the *Good Hope* and R. Miller to the *Rupert* and to the *Terror* on recommissioning. Staff Surgeon A. E. Kelsey to the *Andromache*. Surgeons: J. O'Hea to the *Ariadne* for the *Columbine* on recommissioning; E. R. Grazebrook to the *President*, additional for three months' hospital course; and A. F. Fleming to Chatham Yard, lent temporarily.

2nd Life Guards: Surgeon-Lieutenant R. M. Cowie to be Surgeon-Captain (dated April 11th, 1904).

Royal Horse Guards: Captain St. J. B. Killery, from the Royal Army Medical Corps, to be Surgeon-Captain (dated May 4th, 1904).

ROYAL ARMY MEDICAL CORPS.

Surgeon-Lieutenant-Colonel G. S. Robinson, Scots Guards, assumes charge of the troops and Station Hospital, Eastbourne, vice Lieutenant-Colonel J. E. Fannin. Major R. E. Kelly (retired pay) on relief of his present duties by Lieutenant-Colonel P. B. Tuthill (retired pay) will be temporarily employed as medical officer in charge of the 3rd Battalion Royal Sussex Regiment during the annual training at Arundel.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant G. F. Whyte to be Surgeon-Captain (dated April 17th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Sussex: Harold Harris E. Scatliff to be Surgeon-Lieutenant (dated Jan. 23rd, 1904). 1st Banff: Surgeon-Major (Surgeon-Lieutenant-Colonel, Army Medical Reserve of Officers) W. L. Stewart resigns his commission with permission to retain his rank and to wear the prescribed uniform (dated April 30th, 1904); John Hector Stephen to be Surgeon-Lieutenant (dated April 30th, 1904). 1st Cinque Ports: Surgeon-Lieutenant W. L. Chubb resigns his commission and is granted the honorary rank of Surgeon-Captain, with permission to wear the prescribed uniform (dated April 30th, 1904). 1st Devonshire: Surgeon-Captain G. P. Barton resigns his commission (dated April 30th, 1904). 1st Durham: Surgeon-Captain D. Todd to be Surgeon-Major (dated April 30th, 1904).

Royal Engineers (Volunteers): 1st Aberdeenshire: Surgeon-Captain W. Sinclair to be Surgeon-Major (dated April 30th, 1904).

Rifle: The Cambridge University: Surgeon-Captain J. Griffiths to be Surgeon-Major (dated April 30th, 1904). 3rd Volunteer Battalion the Welsh Regiment: David Hepburn, late Major, Edinburgh Company, Royal Army Medical Corps (Volunteers), to be Surgeon-Major (dated April 30th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

1st Lothian Bearer Company: Lieutenant A. A. Ross to be Captain (dated April 30th, 1904).

ROYAL JERSEY MILITIA.

The undermentioned Supernumerary Officers are absorbed into the Establishment:—*1st or West Battalion:* Royal Jersey Light Infantry: Surgeon-Major W. Falla (dated April 8th, 1904). *2nd or East Battalion:* Royal Jersey Light Infantry: Surgeon-Captain F. N. Gaudin (dated April 8th, 1904). *3rd or South Battalion:* Royal Jersey Light Infantry: Surgeon-Major A. B. Voisin (dated April 8th, 1904).

THE WAR IN THE FAR EAST.

Everyone is following with extreme interest the course of events in the Russo-Japanese war which up to the present time is very favourable to the Japanese. The latest news from the Far East leaves no doubt of the nature of their success upon the Yalu, where the general staff of the Japanese army has achieved one of the most difficult and brilliant exploits in military history in crossing a river in the face of an opposing force and in successfully attacking and carrying the strongly defended positions held by the Russians. This success on land, following those on the part of the Japanese navy at sea, furnishes unmistakeable evidence of the nature and quality of the Mikado's forces. The relatively small losses on the part of both the Russian and Japanese armies in the late battles on the Yalu were a matter of surprise considering the numbers engaged, the nature of the fighting, and the military strength of the positions captured. But those on the side of the Russians turn out to have been much larger than originally

reported and they seem to have principally occurred after they had given way and were in retreat. Turning, however, from these military considerations to those of a medical nature we may say that the Japanese are a most painstaking and up-to-date people in all their arrangements. They have excellent army hospitals and a good medical system and organisation. Lieutenant-Colonel W. G. Macpherson, C.M.G., of the R.A.M.C., a very competent officer, has been attached to the Japanese army to report on the medical arrangements.

In the preliminary report of the chief surgeon of the first Japanese army corps, referring to the recent operations on the Yalu, it is stated that there were 798 killed and wounded.

The Warsaw *Dnevnik*, discussing the importance of pure water for the soldiers, says the Lyao-che is a notoriously dirty river the water of which is simply of chocolate colour.

The Principal of the Russian Red Cross Society in the Maritime Province of Far Eastern Russia, Prince B. A. Vacilovitch, has advised the executive committee that the 2525 beds put at his disposition are not nearly enough. In view of this and to provide the necessary accommodation the committee proposes to fit up a number of buildings as hospitals to be ready at the end of autumn, when the war is expected to be at its height.

Besides the 63 medical men already sent to the seat of war from the Imperial Military Medical Academy a selection is about to be made from those still in the Academy of five surgeons and 12 assistants who will be specially detailed for duty for the hospital trains.

RUSSIAN LADY DOCTORS' ENTERPRISE.

On April 24th the Moscow "accoucheur gynæcological building" of the Women's Medical Institute was consecrated. This building, which has already cost 133,000 roubles (£13,300), collected with considerable difficulty in Moscow, is still incomplete as to its fittings and furniture and the task is still ahead of the Moscow branch to gather another 23,000 roubles to complete the equipment and to put the institution into working order. The house will contain 50 beds.

A YEOMANRY MASONIC LODGE.

A lodge of Freemasons in connexion with the Middlesex Yeomanry was consecrated under the name of the Middlesex Yeomanry Lodge at Freemasons' Hall by Sir Edward Letchworth, Grand Secretary, assisted by other Grand Officers on April 18th. This is the first Masonic lodge formed in connexion with the Yeomanry and its first Worshipful Master is Major W. Duncan, M.D., F.R.C.S., obstetric physician to Middlesex Hospital.

DENTISTRY IN THE RUSSIAN ARMY.

A committee appointed by the Russian Imperial Medical Academy to report on a better system of education in dentistry has concluded as follows: That the inclusion of dentistry in the Academy's curriculum is indispensable and will fill a blank in the education of military medical men. If need be new accommodation should be built and fixed remuneration for professorship should be provided, since at present such instruction in dentistry as is provided in the Academy is by a *privat-docent* without fixed fees.

Correspondence.

"Audi alteram partem."

THE CHOLERA AND ENTERIC FEVER EPIDEMICS AT HAMBURG.

To the Editors of THE LANCET.

SIRS,—I appreciate the honour you conferred upon me in writing a leading article on my paper about enteric fever and cholera at Hamburg and calling the attention of your readers to the facts contained therein. I am sorry to learn from your *exposé* that our opinions about the epidemiology of both diseases differ widely, yet I trust you will agree with me that not a prolonged discussion will be able to clear our theories but only the experiences derived from the next invasion of cholera in Europe. Nevertheless, I beg your permission to correct some statements of yours. You say Altona or a great part of the town is built on a hard rock. That is erroneous. Altona rests on the same formation of soil as the whole north German geest and as the greater part of Hamburg too. Furthermore, at Altona away from the river there are no low-lying and poor districts where the death-rate from cholera was very much higher than in the upper parts of the town. It is true I omitted in my lecture detailed descriptions about the distribution of the cases of cholera in the geest districts and the marshland of Hamburg and Altona, also about the influence of the average wealth and of the density of population, &c. I was afraid to trespass the borders of my paper and I contented myself to state the geest was attacked as severely as the marsh. However, abundant information about all those conditions is published in my "Jahresbericht über die Medizinische Statistik des Hamburgischen Staates, 1892," and by Gaffky in vol. x. of the "Veröffentlichungen des Kaiserlichen Gesundheitsamts." The figures you quote are taken undoubtedly from these sources. You will find there ample evidence why Gaffky and I attributed to the water-supply the prominent rôle in the spreading of the large epidemic of 1892. I cannot hope that our reasons might convince you but I trust you will see that all questions raised in your article are extensively investigated by us.

I am, Sirs, yours faithfully,

Hamburg, May 2nd, 1904. DR. REINCKE.

THE EAST LONDON MEDICAL SOCIETY.

To the Editors of THE LANCET.

SIRS,—A society bearing this name has been formed to deal with subjects of medical interest but primarily to press for a reform of the abuse of hospital charity. An open meeting will be held on Tuesday, May 17th, at 3.30 P.M., in King's Assembly Rooms, Cottage Grove, Mile End road, near Burdett-road, E. Circulars are being sent to as many medical practitioners as possible in East and North-East London, but as some may not receive them will they be kind enough to accept this as an invitation to attend.

We are, Sirs, yours faithfully,

GEORGE BLACK,
EDWIN HASTINGS,
F. HARRIS WHITE,
Honorary Secretaries *pro tem.*

White House, Tredegar-road, Bow, E., April 30th, 1904.

ON CONTINUOUS CLINICAL TEMPERATURE CHARTS.

To the Editors of THE LANCET.

SIRS,—Some years ago while house physician to Dr. J. K. Fowler at the Middlesex Hospital I was studying the different types of temperature charts met with in cases of pulmonary tuberculosis. To some of these, notably the inverse type, where the early morning temperature is higher than the evening temperature, being a continuation of the evening rise, Dr. Fowler attached some importance, for its appearance sometimes heralds the onset of acute general tuberculosis. It then occurred to me that a continuous record of a patient's temperature registered on an automatically moving chart might show recurring variations which by our present method of charting temperatures remain unobserved, but which, if observed, might throw some light on the nature or progress of an illness. Mr. Whipple of the Cambridge Scientific Instrument Company kindly placed one of Callendar's electric recorders at my disposal, and he also took considerable trouble in preparing suitable terminals for making clinical observations. Ultimately a glass bulb after the pattern and size of one of Messrs. Burroughs, Wellcome, and Co.'s enules was made and this, carrying the fine platinum wires, was used for taking either axillary or rectal temperatures. Dr. Fowler kindly gave me permission to use the recorder in his wards. The instrument yielded excellent and accurate results though there was some difficulty in standardising it. The patients, however, objected to the constant wearing of the bulb in the axilla which caused some discomfort after 24 hours. By making the bulb flat this inconvenience might be overcome. Shortly after this I took up practice here and had, therefore, to desist from further experiments, but I have been much pleased to read in THE LANCET of Feb. 27th, which arrived by the last mail, that Professor Ronald Ross has made some further experiments, apparently with the same apparatus. I sincerely hope that these experiments will be continued.

Records of continuous temperatures offer a new field for research and the results are likely to prove of value. Thus the sudden fall of temperature which usually follows a perforation of the bowel in enteric fever or the hyperpyrexia

of rheumatic fever would be instantaneously and automatically recorded, or again the fall of temperature resulting from shock might be observed during the progress of a major operation. But besides registering the temperature of a part of the body at any particular moment Callendar's recorder may be made to register the difference between the temperatures of any two parts—e.g., the difference between the axillary and the rectal temperatures. This is done by using two separate terminals, one of which is placed in the axilla and the other in the rectum; the difference in temperature between the two bulbs is recorded in a single curve. The difference between the axillary and the rectal temperature is sometimes considerable (as in cholera) and this is a subject that may repay further study. Should the investigation prove fruitful it is to be hoped that someone may devise an instrument of smaller dimensions and less cost.

I am, Sirs, yours faithfully,

C. REISSMANN, M.A., M.D. Cantab., B.Sc., M.R.C.P. Lond.

Adelaide, South Australia.

BRITISH HOME AND HOSPITAL FOR INCURABLES.

To the Editors of THE LANCET.

SIRS,—Amongst your notices of "Donations and Bequests" I see the name of the late Mr. William Sutton, M.D., but you do not mention a legacy of £250 left to this institution by him. If only out of justice to the deceased gentleman I shall be glad if you will insert this in your next issue.

I am, Sirs, yours faithfully,

EDGAR PENMAN.

April 29th, 1904.

WELSH MEDICAL DINNER.

To the Editors of THE LANCET.

SIRS,—It has been decided to hold a Welsh medical dinner at Prince's Restaurant, Piccadilly, London, W., on May 25th, 1904, at 7 for 7.30 P.M. Sir John Williams, Bart., has kindly consented to preside. Gentlemen intending to be present or to introduce guests are specially requested to give notice in writing to either of the honorary secretaries as soon as possible. A general meeting will be held at 6.30 P.M., at which all should endeavour to be present, to discuss the advisability of instituting an annual reunion.

We are, Sirs, yours faithfully,

T. P BEDDOES, WILLIAM LLOYD, } Honorary Secretaries.

63, Wimpole-street, Cavendish-square, W., May 3rd, 1904.

TESTING THE EYESIGHT OF THE NATION.

To the Editors of THE LANCET.

SIRS,—With reference to a recent article in the *Times* newspaper under the above heading, which is commented upon in THE LANCET of April 16th, I am authorized by my council to state that the Optical Society, which is mainly a scientific society, as I show in my subsequent quotation of its objects, does not at this stage commit itself to any definite opinion on the sight-testing question nor can it accept responsibility for the views of individual members; moreover, it does not organize or conduct examinations or grant "diplomas" of any sort whatever.

In the article I quote it is mentioned that the *Optician and Photographic Trades Review* is stated to be the official organ of the Optical Society. That journal is the official medium for the publication of the society's notices and proceedings but it is in no sense authorized to voice independently the opinions of the Optical Society as a body. Moreover, I have the authority of the editor of the *Optician and Photographic Trades Review* for the assertion that neither he nor the *Official Journal* had anything to do with sending out the so-called "circular communication."

As a matter of interest to your readers I shall be glad if you will permit me to state that the objects of the Optical Society (which was founded in the year 1899) are: (1) to promote intercourse between those interested in the science of optics in the United Kingdom, the colonies, or foreign countries; (2) to foster and to disseminate knowledge of optical matters among its members; (3) to arrange lectures, discussions, and demonstrations on optical science and optical instruments; (4) to provide its members with information on all optical subjects of interest; (5) to promote the establishment, adoption, and recognition of standard sizes, gauges, calibres, templets, and methods for universal use with all optical and other scientific instruments; and (6) to print, publish, sell, lend, or distribute the proceedings or reports of the society or any papers or communications on optical science or subjects connected therewith.

I am, Sirs, yours faithfully,

W. SALT, honorary secretary.

Hanover-square, London, W., May 3rd, 1904.

THE TENURE OF OFFICE OF THE MEDICAL OFFICER OF HEALTH.

To the Editors of THE LANCET.

SIRS,—It is extremely satisfactory to note that the Local Government Board has recently in some instances signified to district councils its willingness to consider favourably applications made as to the reappointment of medical officers of health without limit of time where the officers in question have been in office some years and have discharged their duties satisfactorily. The duties which have to be discharged by a conscientious medical officer of health are so important and often so diametrically opposed to the views of some individual members of a district council that where after a trial of two or three years a medical officer of health has satisfied the Local Government Board as to his discretion and competency that body should certainly see to it that the public do not lose a valuable servant through the caprice of a district council.

The reappointment without limit of time is as essential for rural district medical officers of health as for urban if sanitary reforms, which are at the present time a pressing necessity, are to be satisfactorily achieved. I have in mind more particularly at this instant the cleanliness of our milk-supplies. It is a matter of common sense that reform in this direction should begin at the fountain head—in short, with the cow. Security of tenure is essential if the medical officer of health of a rural district council is fearlessly to enforce the provisions of the Dairies, Cowsheds, and Milkshops Order and of the Model Regulations framed by the Local Government Board under Art. 13 of that order. No district council should have the power to terminate the appointment of a medical officer of health except on the ground of his incompetency and then only with the approval or endorsement of the Local Government Board.

I am, Sirs, yours faithfully,

PUBLIC HEALTH.

May 2nd, 1904.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of April 30th, p. 1239, one of your correspondents drew attention to the fact that the Dolgelly rural district council had fallen in with the suggestion of the Local Government Board and appointed its medical officer of health "without limit of time." Probably few of your readers are in a position to appreciate the great practical importance of what appears to be a small administrative detail. No apology need therefore be offered for emphasising the advantages that would accrue were the Local Government Board invariably to take this course and were all local authorities equally amenable to advice from headquarters.

Under present conditions the majority of provincial medical officers of health are appointed for a short term of years, usually, indeed, for one year only. This means that at the end of that term a medical officer who has refused to prophesy smooth things or has been in any way too active may be got rid of by the simple process of refusing to vote for his reappointment. It also means that every year the jerry-builder, the slum-owner, and the crank have a golden opportunity of making themselves more than commonly offensive by publicly objecting to the reappointment. In many districts this is a chance which is never missed, as the writer knew to his cost when medical officer of a small urban district. In such circumstances it can hardly be a matter for wonderment if the nature of the average official sometimes is subdued to what it works in, like the dyer's hand, and that annual reports tend to become too complacent. To take a concrete instance, it requires no small amount of force of character for the medical officer of a rural district to insist on dairy and cowshed regulations being strictly enforced when he knows that nearly every member of his authority is both by interest and by

prejudice opposed to such enforcement, but it needs very considerable courage when the officer's very livelihood is imperilled if he tenders unwelcome advice. Fortunately that courage is frequently in evidence, but in any case there is a temptation to let things slide, which is bad for all concerned and especially for the public whose interests the medical officer is supposed to guard.

Now, Sirs, some of your readers are members of local authorities, while many others occupy positions of influence throughout the country, and I would suggest that they could render a greater service to public health by insisting that all appointments should be made "without limit of time." This would not only have the effect of diminishing opportunities for petty tyranny but would give security of tenure to those medical officers whose salaries are partly paid from Imperial sources, as such officers cannot be removed during the term of their appointment except with the consent of the Local Government Board. Will not THE LANCET again assist us by advocating such a far-reaching reform?

I am, Sirs, yours faithfully,

May 4th, 1904. HAUD IGNARUS MALI.

THE ORGANISATION OF THE PROFESSION.

(FROM OUR SPECIAL COMMISSIONER.)

THE MANCHESTER MEDICAL GUILD AND THE BRITISH MEDICAL ASSOCIATION.

THERE is nothing of a particularly sensational character to record in regard to the Manchester Medical Guild. During the last three or four years this organisation has kept on in the even tenour of its way. It has not retrograded nor has it made any notable step forward. If it is the best-governed people that have no history the Manchester Medical Guild may claim that, according to this axiom, it must be a model institution. If, however, there is nothing startling to record there has been much quiet, steady work done. To begin with, the monthly meetings of the guild have been regularly held and these very effectively help to keep the members in touch with each other; then for those who may fail to attend all these gatherings there is the *Medical Guild Quarterly* which constitutes a periodical official record of what has been done; but, not content with their monthly meetings and their quarterly publication, there is now a further effort being made so that the members may come into still closer and more constant association. A scheme brought forward long ago, but which fell through, has now been revived and it consists of creating a medical social and scientific club. The guild has more than 200 members and this would constitute a good nucleus for a club. But there are other medical societies to whom a common meeting place would be of use and they might join hands so as to have one great central meeting place for all the societies and organisations formed by members of the medical profession. Apart from ordinary accommodation, this club should have one or more fairly large committee rooms so that the various societies, such as the Medical Guild, the Medico-Ethical Association, and the Clinical Society of Manchester, might have their meetings at the club. The rent which these societies pay for offices or meeting places could then go to the maintenance of the club and all that is of interest to the profession could be concentrated in one single building. This evidently would be the best means of insuring success and it is to be hoped that individual predilections will not stand in the way of union for so useful and so agreeable a purpose.

Of course, though in a quiet way, the guild has helped to settle and to prevent disputes, and this not only in Manchester and Salford but also in outlying districts. For instance, at some large coal-pits in the Pendlebury district there was a dispute. The employers compelled all their men to insure against accidents but some of the miners had a society of their own and as neither organisation could agree as to who should pay the medical attendant the latter ran every risk of not being paid at all. The medical profession being organised, however, and able to present a united front was strong enough to enforce the acceptance of an agreement. It was then settled that the men's society should limit its action to the payment of benefits such as sick allowances, while the fund collected by the employers should serve to pay the fees of the medical attendants. There was, however, another difficulty. The agreement is that the colliery surgeons receive 15*s.* for every case of accident. Of course, this is remunerative only on condition that the trivial accidents are included but it had become the practice to send minor cases to the dispensing druggist. This has been altered and the colliery surgeons having now to attend the slight as well as serious cases the average of 15*s.* per case becomes reasonably profitable. When the colliery surgeons first insisted on these points there was an outcry. Threats were made that advertisements would be published inviting some outside practitioner to come to take the place of the old-established colliery surgeons but when it was found that the latter were really well organised all such resistance was abandoned and the colliery surgeons won their contention all along the line.

Though there has been comparative calm for some years now it seems very probable that a storm may burst at no distant day. The trouble which arose during the course of last year with the Manchester and Salford Provident Dispensaries Association has already been described.[1] These dispensaries are providing municipal servants with medical attendance for 3*s.* 6*d.* per annum. Even the workmen themselves very generally recognise that this is not enough. Some three or four years ago an interview took place between representatives of the Manchester Medical Guild and officials from the local friendly societies and sick clubs. The discussion which ensued showed that the objection was not so much against an increase in the amount of the subscription paid but the fear that one concession if made would lead to agitations for further increase. If the medical profession could only decide once and for all—and this all over the country—what would be considered as permanently satisfactory there would be some prospect of coming to an understanding. The Manchester Medical Guild proposes to act upon this suggestion. There should be a minimum charge for contract work which should be recognised in every part of the country and enforced on every society. But this is beyond the power and scope of the medical unions that have been constituted to deal expressly with economic questions. These unions, though becoming more numerous, are still confined to certain counties, towns, and localities. Here, then, is an opportunity for the British Medical Association since its branches are established all over the country. Consequently the Manchester Medical Guild proposes to arrange so that at the next annual meeting of the British Medical Association a motion shall be made declaring that the minimum for contract work throughout the country shall be 4*s.* per annum.

The new constitution of the British Medical Association has caused confusion and doubts to arise in the ranks of the various medical unions such as the Manchester Medical Guild which had been constituted to take action in regard to economical and ethical questions. It was but natural to imagine that these unions would merge in the new divisions and branches of the British Medical Association. Theoretically this seemed the best course to follow but for the time being at least it would not work in practice. The medical unions have gained substantial advantages. There is much that remains to be done but already very palpable benefits have been attained. To abandon these means of action could only be compared to the proverbial loss of the bird in the hand for the sake of two in the bush. The Manchester Medical Guild in any case, as one of its members stated, does not feel inclined to commit suicide for the sake of a paper constitution. Then there are fundamental differences. A medical union differs in the recruiting of its members from all other medical societies or organisations. Most societies are pleased to enrol men of standing and of the best repute. A medical union is also pleased to bring together those members of the profession who hold the best position; but its main object is, on the contrary, to get at the poorest of practitioners. It is from those who are on the lowest rung of the ladder that a disastrous competition may be feared. They tend to lower the standard of living and the dignity of the profession. Consequently it is most necessary to bring them under the discipline and moral control of a strong professional union. Then with these less fortunate members of the profession the question of subscription, which in many instances is not more than 5*s.* a year to cover the working expenses of the medical union, is a matter of consideration. Thus it happens that many

[1] THE LANCET, April 30th, 1904, p. 1236.

members of the medical unions are not, and would have some difficulty in becoming, members of the British Medical Association. If, however, this end is ultimately to be attained the British Medical Association must first prove that it thoroughly grasps the questions at issue and that it has the intelligence, the power of initiative, and the enterprise to grapple with them effectively.

The proposal which the Manchester Medical Guild hopes to see brought forward at the Oxford meeting of the British Medical Association will serve as a preliminary test. It will be a splendid opportunity, for this is a matter that could be settled more effectually by the British Medical Association than by the medical unions even if they were all unanimous. It is quite natural that the friendly societies and other such bodies should say that they first of all want to know what it is the medical profession really does desire. The Manchester Medical Guild may answer that they desire a minimum of 4*s.* for contract work, but it may be shown that at Southampton and elsewhere the payment of 5*s.* and even 6*s.* has been enforced. While in some places medical men have accepted as little as 2*s.* 6*d.* per annum they have asked double and treble as much elsewhere. The friendly societies and sick benefit clubs may well complain that the medical men do not know what they want. But the gathering at Oxford will afford a unique opportunity of getting something like uniformity introduced in regard to the demands that shall be brought forward in the future.

One of the greatest objections that can be made against the medical unions as they exist to-day is their isolation. They have to deal with bodies that are not isolated. The great friendly societies are national institutions governed by central committees with branches all over the country and the colonies. This gives them a distinct advantage which the action of the British Medical Association might effectively counteract if that body could prove itself competent to deal with such questions.

In the meanwhile, though hoping to make the minimum for contract work a national question, the Manchester Medical Guild is pushing the matter forward as a local question. In 1899 a pledge was circulated asking the local practitioners to promise that they would not accept any contract work for less than 4*s.* a year. This had a good effect at the time and many clubs raised their rate of payment accordingly. But some club medical officers feared to take action, giving as their excuse that the pledge had not been unanimously accepted. Others while agreeing with the principle did not like the idea of signing a pledge. Then there was the competition of the "sixpenny doctors" who had been neglected and who would offer to do the club work whenever any difficulty arose between the clubs and their usual medical officers. Indeed, this question of the "sixpenny doctors" is an important matter which has been too readily set aside. Just as it is necessary to establish a minimum rate of subscription for contract work, so also there should be a minimum fee for consultations. In the meanwhile exception may be taken to the minimum proposed by the Manchester Medical Guild. It should be not 4*s.* per annum but 1*d.* per week—that is, 4*s.* 4*d.* per annum. As only poor people should be allowed to contract at such rates they must pay by the week and 4*s.* a year would mean that during four weeks no collection would be made. If a man can pay 1*d.* during 48 weeks the probability is that he can do so during the whole of the 52 weeks into which the year is divided. It would in any case be an excellent measure to fix on some such limit and it is to be hoped that the Manchester Medical Guild will not fail to press the matter forward.

LITERARY INTELLIGENCE.—Messrs. H. K. Lewis are just issuing the eleventh edition of Martindale's Extra Pharmacopœia, revised by Mr. W. Harrison Martindale, F.C.S., and Dr. W. Wynn Westcott. The book has been considerably remodelled, many of the older drugs, chemicals, and preparations having been omitted and 300 new remedies being included. The sections on antitoxins and organotherapy have been almost entirely rewritten.—*The Electrician* Printing and Publishing Co., Salisbury-court, London, announces that it will issue early in May an important work by Mr. F. Soddy, M.A., entitled "Radio-Activity: an Elementary Treatise from the Standpoint of the Disintegration Theory." This is intended as a text-book for students and others interested in the fascinating research work connected with radium and other radio-active substances.

THE GERMAN SURGICAL CONGRESS.[1]

(FROM OUR BERLIN CORRESPONDENT.)

(*Continued from p. 1256.*)

Operations on the Brain.

PROFESSOR MADELUNG (Strasburg) described the case of a boy, nine years of age, who received a gunshot wound of the brain three years ago and had since suffered from amaurosis, slight hemiparesis, and general disfigurement from excessive adiposity. From the situation of the wound and from the appearances presented by skiagrams he concluded that the hypophysis had probably been injured.

Dr. STOLPE (Breslau) said that in a man 40 years of age who had suffered from acromegaly and general adiposity he had found adenoma of the hypophysis and a metastatic deposit in the right occipital lobe.

Professor VON EISELSBERG (Vienna) said that he had made experiments on the hypophysis of cats and had found that complete removal of it always caused the death of the animal.

Dr. BORCHARD (Posen) mentioned the case of a girl, nine years of age, who, three years after a serious injury to the skull, showed symptoms of mental impairment. The skull was trephined and an abscess was opened with the result that the psychical troubles disappeared. Dr. Borchard was of opinion that they were due to local irritation of the brain.

Dr. FRIEDRICH (Leipsic) said that he had seen a patient who, after a traumatic lesion of the brain ten years ago, suffered from mental disturbance but recovered after removal of a large growth in the frontal lobe.

Professor HILDEBRAND (Basle) reported the case of a patient who, two days after an operation on the nose, in the course of which the galvano-cautery was used, suffered from marked pyrexia, slow pulse, paresis of the nervus abducens, protrusion of the eyeball, œdema of the eyelids, and mydriasis. As there probably was thrombosis of the cavernous sinus he gave several injections of Tavel's anti-streptococcic serum. Notwithstanding the development of slight erysipelas at the place of the injection all the symptoms eventually disappeared, the paresis of the nervus abducens being the longest maintained.

The Function of the Thyroid Gland.

Dr. LANZ (Amsterdam) read a paper on the procreative faculty of animals whose thyroid gland had been removed. He found that the loss of this gland produced in moderately young animals sterility which was but little influenced by feeding with thyroid gland or by the administration of iodine. As to the human genus he alluded to the case of a male cretin, aged 28 years, in whom sexual desire had been absent previously to the administration of thyroid gland but thereupon it appeared at once. He afterwards married but had no children. In a female cretin menstruation made its appearance only after thyroid feeding.

Intrathoracic Operations.

Dr. SAUERBRUCH (Leipsic) read a paper on a pneumatic apparatus devised by him for the prevention of pneumothorax in intra-thoracic operations. It consisted of a kind of chamber in which the pressure was reduced by an air pump. It was first tried in operations on animals; the animal was put into the chamber so that only its head was outside and an air-tight junction was made by means of a caoutchouc ring. The operator and his assistants were inside and the anæsthetist was outside the chamber. The principal feature of Dr. Sauerbruch's apparatus was that the respiration continued to be normal after the thorax was opened, the difference of pressure between the bronchi and the pleural cavity being kept constant.

Professor VON MIKULICZ (Breslau), in whose clinic Dr. Sauerbruch had made his experiments, confirmed the statements contained in the paper and expressed his views as to the future of intra-thoracic operations with the aid of Dr. Sauerbruch's apparatus.

Professor PETERSEN (Heidelberg) recommended instead of Dr. Sauerbruch's method the subjecting of the bronchial system to increased atmospheric pressure. For this purpose

[1] For this report we wish to tender our thanks to the editor of the *Deutsche Medicinische Wochenschrift*, through whose courtesy it has been forwarded to us by our correspondent.—ED. L.

he used an apparatus similar to Waldenburg's pneumatic apparatus, by means of which compressed air was respired.

Abdominal Surgery.

Professor VON MIKULICZ discussed some methods of increasing the resistance of the peritoneum against infection in operations on the gastro-intestinal organs. He explained that a trustworthy disinfection of the peritoneum was very difficult and that prophylactic injections of serum were useless, the efficacy of the antistreptococcic sera being hitherto rather doubtful. The best method was to produce artificial hyperleucocytosis by the administration of nucleic acid; 12 hours previously to an operation 50 cubic centimetres of a 2 per cent. solution were given. Of 34 patients suffering from serious diseases of the stomach and intestines none died from the operation, a result which Professor von Mikulicz attributed to the above proceeding. Administration of a saline solution was likewise efficacious.

Dr. BRUNNER (Münsterlingen) read a paper on the difference of virulence of the contents of the duodenum and the colon. He said that perforation of the duodenum was much more dangerous than that of the colon and that the bactericidal action of the peritoneum showed great differences in individual cases. He then gave an account of experiments made on animals for the purpose of destroying the bacteria of the intestines, especially bacterium coli; he found injections of acids to be the most efficacious method.

Dr. KADER (Breslau) expressed the opinion that peritonitis might be avoided by giving an injection of antistreptococcic serum ten hours previously to an operation. He even recommended the giving of prophylactic injections to every soldier 24 hours before a battle.

Professor KUSTER recommended in septic peritonitis the making of a small incision through which a drainage-tube or a strip of gauze might be introduced; the patient must then be kept permanently on the back even when the dressing was changed. This position was, of course, very tiresome and even insupportable to certain patients.

Professor FRIEDRICH (Greifswald) read a paper on subcutaneous feeding of patients operated on for gastro-intestinal diseases or for peritonitis where the administration of food by the mouth or rectum was unavailable. He recommended the injection of about 60 or 70 grammes of glucose and of the same quantity of olive oil; to meet the want of albuminous substances he recommended injections of a pepsin-peptone solution. In this way a patient might be sustained for some time.

Dr. PAYR (Graz) drew attention to thrombosis of the veins of the intestine, the mesentery, and the peritoneum which sometimes produced profuse hæmorrhage from the gastro-intestinal vessels and might occur in strangulated hernia and in appendicitis.

Professor RIEDEL showed specimens of perforated gastric ulcers. The prognosis of peritonitis in those cases was rather bad, and an early diagnosis of ulcer was therefore essential from a surgical point of view. The ulcer was in the majority of cases situated on the small curvature and on the pylorus; pain was as a rule felt on the left side and usually appeared so early that by careful dietetic treatment the patient might sometimes be saved

Dr. FRANKE (Altenburg) showed a patient suffering from cancer of the pylorus in whom he had first performed gastro-enterostomy and four weeks afterwards resection of the growth. He explained the advantages of this proceeding.

Dr. SEEFISCH (Berlin) said that three years ago he had performed gastro-enterostomy for stenosis of the pylorus in a child now four and a half years of age. The Murphy button was found to be present in the stomach one and a half years after the operation; by a recent radiogram it was, however, ascertained that the button had in the meantime been spontaneously discharged.

Dr. BORCHARDT (Berlin) mentioned the case of a patient suffering from aneurysm of the aorta who showed uncertain symptoms of dilatation of the stomach after a grave injury of the abdomen. The patient died on the fifth day and the necropsy revealed volvulus of the stomach and complete obstruction of the pylorus and the cardia.

Dr. LAMPE (Bromberg) discussed the functional troubles of the gastro-intestinal canal following gastro-enterostomy according to the method of Wölfler and Lücke. They were, he said, caused by œdema and might be avoided by introducing an absorbable drain into the anastomosis.

Dr. VON BECK (Carlsruhe) said that he had investigated 500 cases of colitis, of which 170 occurred in men and 330 in women. They were a sequel to different abdominal diseases—perityphlitis, enteroptosis, cancer, tuberculosis, and actinomycosis of the colon. In six of his own cases he cut out the entire colon from the circuit by joining the ileum to the sigmoid flexure—i.e., performing an ileo-sigmoid-ostomy. One of his patients died but the others recovered.

Dr. BUNGE (Berlin) spoke on the causation of subcutaneous ruptures of the intestines which arose either from direct crushing or from bursting or from distension. The rupture happened in the majority of cases between the ileum and the cæcum or between the sigmoid flexure and the rectum. Rupture of the mesentery was particularly dangerous.

Professor WULLSTEIN (Halle) said that he had made numerous experiments on resection of the intestines and the stomach without opening the lumen. The principal feature of his method was that the serosa was sutured first over an absorbable button, the walls of the intestines being then compressed by a special instrument. This method of splanchnotripsy was used in invagination, in appendectomy, and in gastro-enterostomy.

Dr. RIESE (Britz) mentioned two cases in which after an operation gauze compresses had been accidentally left in the peritoneal cavity. In one case the compress was in the intestine, in the other it was in a mesenteric cyst. Both cases were successfully treated by laparotomy. No inflammation ensued, the gauze being aseptic.

(To be continued.)

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Medical Arrangements with the Tibet Mission.—The Plague Epidemic.

THE medical arrangements with the Tibet Mission not only provide for our own sick and casualties but also as a civilised power for medical aid to the Tibetans. It must be borne in mind that there are hosts of followers engaged in road making and transport to be provided for and that from the base at Siliguri at the foot of the Himalayas the road goes through the tropical Teesta Valley and then upward for 150 miles or more through the most difficult and inhospitable mountains in the world. Up to the present the daily sick list has averaged 100 fighting men and about 200 followers. The medical establishment is under Lieutenant-Colonel L. A. Waddell, C.I.E., I.M.S., and consists of 16 executive officers, 31 assistant surgeons and hospital assistants, a large staff of nursing orderlies, and assistants with ambulance, transport, tentage, stores, comforts and other impedimenta in abundance. At each chief stage of the journey there has been established a section of a hospital and at small intervening posts a hospital assistant with medicines. Hospital huts are now being built to replace the tents. The ambulance transport is a host in itself. Besides eight stretchers per regiment there are about 50 doolies each carried by six bearers and also ambulance chairs, riding ponies, and for the road up the Teesta Valley a dozen bullock tongas. As the Indian doolie-bearer is no good for the mountains and the cold, some 300 Tibetans and Sikhimese were engaged as bearers but many of these deserted. At the action at Guru, after our own wounded had been attended to, the medical officers rendered help to the enemy's wounded and about 180 were carried from the battlefield to Tuna and Guru villages.

The plague returns for the week ending April 2nd show 46,320 deaths compared with 39,975 in the preceding week. The provinces were affected as follows: Punjab, 19,322 deaths, against 12,594; United Provinces, 8610, against 8776; Bombay districts, 5470, against 7176; Bengal, 4810, against 4109; Central Provinces, 1798, against 2230; Central India, 1469, against 1605; Bombay city, 1065 against 931, but the local returns for the week ending April 9th show a decline to 814; Karachi, 293, against 215; Calcutta, 544, against 471, but later local returns show, like Bombay, a decline. Kashmir reports 540 deaths and Rajputana 1335. It is only in the Punjab that there has been any decided increase during the week, the remaining provinces nearly all showing a decline. After being free from the disease for so many years plague has broken out in Madras city. Ten indigenous cases are reported partly in the city itself and partly in an adjoining village.

April 15th.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

Food Adulteration in the City.

THE report of the borough analyst shows that this form of dishonesty is on the decrease in Birmingham. The total number of analyses last year was 1660, of which 1303 were conducted under the provisions of the Sale of Food and Drugs Acts and the remaining 357 under applications from the various Government departments. The samples submitted under the Acts represent only 2·4 per 1000 inhabitants, this being a smaller proportion than in the preceding year. It is also a much smaller proportion than that in London where the number of analyses amounts to 4 per 1000. 532 samples of milk were dealt with during the year with the result that 450 of these samples proved to be genuine. Of 368 samples of butter examined adulteration was found to have taken place in 21. The worst sample of milk examined was taken from a milk-cart and contained 29 per cent. of added water, 20 per cent. of skim milk, and a small quantity of boric preservative.

The Arley Small-pox Outbreak.

This outbreak, which originated at Arley near Nuneaton, has not only affected the union at that place but also those of Atherstone, Foleshill, and Meriden. About 30 cases have been notified and the majority of these are under treatment at the isolation hospital at Binley. The medical officer of the Nuneaton rural district council, which authority will have to bear the bulk of the cost of dealing with the epidemic, has prepared a special report which shows that in one house in Arley there were six children, of whom four were vaccinated and two unvaccinated; the two latter contracted small-pox whilst the four others escaped. In another house there were six children, three vaccinated and three not. The three who were vaccinated escaped small-pox and the three who were unvaccinated contracted it. In another instance there were in one house six unvaccinated and three vaccinated persons and only the latter escaped the disease. The medical officer thinks that there may be a few further odd cases but he does not expect any serious development of the epidemic. Mr. W. H. Boon, the chairman of the rural district council, has intimated that when the epidemic is over he will call attention to the greatly increased cost to the ratepayer incurred through persons refusing to be vaccinated and subsequently falling a prey to small-pox.

The New Women's Hospital.

The foundation-stone of the new hospital was laid a few days ago by Mr. Arthur Chamberlain, the president of the institution. The present building, which is situated in Stratford-road, Sparkhill, has long been too small for the needs of the city and district and the new building which is being erected at Showell Green-lane, Sparkhill, will be of much larger size. The hospital grounds abut upon the Sparkhill Recreation Ground, which is 17 acres in extent, so that there will always be a certainty of abundant fresh air. Prior to the stone laying ceremony the annual meeting of the supporters of the institution was held and the report of the committee was read. During the year 1903 3450 cases had been treated at the out-patient department, this being an increase of 161 on the previous year. The total number of new and old cases treated had been 19,370, being 1292 more than in 1902; 444 patients had been admitted to the in-patient department, an increase of 18; the number of operations had been 426, an increase of 14; and the number of cases involving abdominal section had been 250, 16 more than in the previous year. Of these 10 had died, giving a death rate of 4 per cent. as compared with 1·28 per cent. on 234 operations in 1902. From the founding of the hospital in 1871 up to Dec. 31st, 1902, there had been 3610 operations; of these 218 patients had died, giving a death-rate of 6·03 per cent. The amount which the new hospital is to cost is £40,000, towards which the treasurer has up to the present received £32,000. The new hospital will be in the main a two-storey building of brick. The elevation will be of an unobtrusive character and will not be adorned with any terra-cotta and with but little stone. In the centre is the administrative block with entrance hall, matron's and medical officers' rooms, nurses' and servants' dining rooms, &c. On the first floor, which is approached by two wide fire-resisting staircases, are the sleeping rooms and bath rooms for the matron, medical officers, and servants. At the back of the administrative block are placed four ward units, two on each floor, having a total provision for 48 beds. These are approached from the administrative block by a central corridor on the ground floor. Leading out of this corridor are a dispensary, surgical store, storeroom for patients' clothes whilst they are inmates of the hospital, sewing room, mattress store, and a sitting room for the sister in charge of the floor. There is also a staircase, with low steps, which incloses a lift-shaft in which is an electric lift capable of containing a patient in bed and with a nurse in attendance. On the first floor immediately opposite the lift is the operating department, consisting of an anæsthetic room, two operating rooms, and sterilising rooms, with a sitting room for the sister in charge. Each ward unit is to consist of an associated ward for ten beds, with an isolation ward for two beds, duty room, pantry, a room for washing mackintoshes, and two sanitary annexes placed cornerwise, with balcony between, from which there is a fire-escape to the ground. There is also a bathroom placed near the main staircase, in which patients will be received before they are taken into the wards. The ward buildings are to be constructed on piers and arches allowing of a free air space below the ground floor under the whole area of the buildings as a protection against damp and ground air. A narrow balcony will run along each side of the wards on the first floor, giving patients a chance of sitting in the sun and also affording a means of cleaning the windows from without. The wall and ceiling surfaces throughout these buildings will be painted with a special enamel paint upon plaster and care is being taken as far as possible to avoid any corners in which dirt might be harboured. At the south end of the administrative block is placed a detached nurses' home containing on three floors 20 nurses' bedrooms, three sisters' bedrooms, sick-room, and on the ground floor a recreation room, small kitchen and pantry, bathrooms, &c., and a staircase at the end of the corridor. At the north end of the administrative block is a detached building for the laundry and engineering departments containing on the basement floor boiler and engine room fitted up with complete plant for an electric lighting installation, together with room for accumulators and steam disinfecting room. On the ground floor there are a washhouse and a laundry with up-to-date machinery, also a delivery and receiving rooms. In addition there is a mortuary consisting of post-mortem rooms and friends' waiting room. The administrative ward and laundry buildings are connected below ground by a subway in which will be carried the steam, water, and gas mains and electric cables. The heating will be on what is known as the "atmospheric" system. The convalescent home will be a two-storey building containing on the ground floor an entrance and corridor leading to the day room, dining room, matron's sitting room, kitchen with larder, pantry, and scullery, and also a room for patients' clothes, bathroom, &c. On the first floor there will be two dormitories for patients, each containing five beds, and two for two beds, the matron's bedroom, linen room, and sanitary annexe. There will be an external fire-escape staircase from the first floor to the ground floor. It is expected that the convalescent home will be ready for occupation by September and the main buildings in the early part of next year.

Worcester and Warwick Volunteer Bearer Company.

The annual supper and distribution of prizes to this company has recently taken place, Colonel W. P. Whitcombe, the commander of the company, presiding. Colonel A. W. Duke, R.A.M.C., principal medical officer of the north-western district, was also present, as was Captain Roscoe Badger, Colonel Whitcombe's subordinate officer. Colonel Duke, in responding to the toast of his health, pointed out that his district extended from Carlisle in the north to Hereford in the south. In that district there were many volunteer brigades and many bearer companies. The company he was addressing was now only a little over one and a half years old and he had seen nothing like the results which they had achieved in any other bearer company in the midland district. There was no work in England that he looked upon as more important than the work which they were doing. Supposing this country were invaded they all knew what a great number of men might be wounded in a very few minutes. It would be impossible for the Royal Army Medical Corps of themselves to deal with them; therefore they were trying to form companies of men like them who were willing to learn how to help the wounded and the sick when they fell. The great

difficulty which they found in forming such companies was the want of assistance from the civilian part of the population. Some brigades were badly in want of such help. In Birmingham they seemed to have received considerable encouragement and he should like to see the people in other places encouraging the men who formed such companies by attending at their gatherings and offering prizes for their competitions. He thought that the greatest credit was due to Colonel Whitcombe and Captain Badger for what they had done.

May 2nd.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

"Tramp Factories."

AT a conference of women guardians held on April 28th in the Manchester town-hall, under the presidency of the Lord Mayor, Mrs. Higgs of Oldham made some strong remarks on the need of re-moulding the present system of dealing with the homeless. By the Poor-law of Queen Elizabeth's time it was proposed that every worker should be anchored to a parish and nobody should be idle. But to-day the decline of agriculture and the growth of "industrialism made it necessary that labour should flow readily from one manufacturing district to another," and such migration should be facilitated. In tramp wards the "tramp" proper and the genuine seeker for work should be distinguished and the latter, man or woman, should be allowed to stay in a town long enough to look for work. Mrs. Higgs spoke from personal experience of tramp wards and common lodging-houses. She said that women who entered a tramp ward scrubbed floors "and for their night's lodging did a day's work worth at any rate 2*s.* and good food. Yet they emerged from the ward half starved and worn out after a long, weary, foodless day." As it is undoubted that the chronic tramp is one of the chief agents in spreading small-pox and other diseases it is desirable that he should be dealt with differently from the genuine seeker for work, however difficult the separation of the two classes may be. The tramp question came up at a meeting of the Cheshire Standing Joint Police Committee held at Chester Castle on April 30th. The Northwich Union wrote calling attention to the tramp nuisance and suggested that a warning issued some years since by the Chief Constable (Colonel Hamersley) "not to relieve tramps or render them any assistance" should be widely distributed. The Chief Constable suggested that when tramps were brought before the justices they should discharge them. It was decided to re-issue the notice. There is no doubt that besides being a costly nuisance the professional tramp is a serious danger to the health of the community.

Sir Henry Roscoe's Graduation Jubilee.

Although Sir Henry Roscoe cannot be claimed as a member of the medical profession it may perhaps be permissible to notice the very general congratulations on the occasion of the fiftieth anniversary of his graduation at Heidelberg as a doctor of philosophy. There was a large gathering in the Whitworth Hall of the Owens College on the evening of April 22nd of the old students of the Owens College, of university professors from all over the kingdom, and of representatives of scientific and philosophical societies, and addresses were read from these and from colonial and foreign universities. It is 47 years since Sir Henry Roscoe became connected with the Owens College when it was located in a dwelling-house in Quay-street. For 30 years he taught at the Owens College, for the last 17 years he has had the title of emeritus professor of Victoria University, while for eight years he has been Vice-Chancellor of the University of London. During his long residence in Manchester Sir H. Roscoe has always shown much interest in questions affecting the public health and medical men everywhere will join in congratulating him upon his graduation jubilee.

The Water-supply.

The annual report of the Manchester Waterworks Committee contains some interesting facts. The reservoirs, watercourses, and subsidiary works at Longdendale, representing the old supply before Thirlmere was tapped, have been maintained in good order and condition. The work of the committee has included the laying of 19 miles of iron piping and connexions made to 4991 additional houses. The full supply of water has been maintained throughout the year. The new 36 inch main from the reservoirs at Prestwich for distribution in the city of the second instalment of the Thirlmere water is nearly completed. The level of the lake itself is being raised 15 feet above the present height and this will considerably increase the storage capacity. This increase is necessary in view of the demand that will be made when the second line of pipes from Thirlmere is completed, as it soon will be. The hydraulic power supply has been well maintained and is extending. The average weekly output of water for the year is 3,590,900 gallons, as against last year's average of 3,565,900 gallons, an increase of 25,000 gallons per week. How long the present supply will suffice is of course as yet unknown, but if the population continues to increase it will be a matter for careful calculation. It will be difficult to find another Thirlmere unappropriated.

"Clean Heads."

We English think ourselves a clean people but we might be cleaner. In some sections of the population the tolerance exhibited towards parasitic pests is something marvellous. In a discussion at a meeting of the Clitheroe education committee Mr. W. E. Musson, an old practitioner there, said he had examined as many as 60 children and found that not more than six or seven had absolutely clean heads. He spoke of the hardship it was to have to send children among those of negligent parents, for no amount of care would keep children's heads clean if they were among others who were unclean. A motion was adopted that where slates were used in schools the practice of spitting should be rigorously suppressed and that the education committee should encourage the use of paper instead of slates as far as practicable. Presumably if the committee suppresses spitting it will supply water, with rags or sponges, for cleaning the slates and paper if used will be burned when done with. It was also decided to recommend the town council to allow its medical officer to visit each school once in three months to examine the eyes, hair, and teeth of the children and that his present salary should be increased by £15 a year. It is to be hoped that the town council will agree to this modest request and some such arrangements should be general, though three-monthly examinations give too much time for parasites to run riot.

Death from Anthrax.

An inquest was held on April 28th on the body of a butcher living near Nantwich who was suspected to have died from anthrax. The evidence showed that on March 31st he dressed the carcass of a cow that was afterwards sent to Manchester market. He became ill and died on April 25th. The owner of the cow said that it died after a few hours' illness and the veterinary surgeon told him from "milk fever," that he said the cow was a good bit of beef, and advised him to make the best of it. The evidence showed that the cow was dead before the veterinary surgeon saw it and that at his suggestion it was dragged out of the shippon and bled. Mr. Frank E. Mathews said that death was due to anthrax. From this case and from others it is evident that there is a great deal of ignorance or carelessness or both with regard to this most dangerous disease, and that the veterinary profession, whose responsibilities in the matter are extremely serious, are not always alive to them. In this case the coroner is reported to have said "it was perfectly scandalous that cows which died from disease were stuck for the purpose of being sent to market and sold for human food." Although there may be some consolation in knowing that when well cooked no ill consequences may befall those who eat it, however nasty the idea may be, still the risk incurred by those who handle the raw meat must be considerable. The verdict was that "Death was due to accidental inoculation from anthrax bacilli," and the jury "expressed dissatisfaction with the veterinary surgeon's evidence and with the way in which he had handled the case." The matter is serious for Cheshire and every care ought to be taken that no more disastrous blunders are made. Cremation of the carcass seems to be the only satisfactory mode of dealing with these cases.

May 3rd.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Vaynor and Penderyn Health Report.

Vaynor and Penderyn form a rural district with a population of 4957 persons situated in Breconshire but adjoining Merthyr Tydvil and this proximity no doubt accounts to some extent for the high death rate of 19·3 per 1000 recorded for 1903. The birth-rate during the same period was 31 per 1000 and the infantile mortality-rate was equal to 189 per 1000 births. This large number of deaths among young children quite justifies the statement contained in the annual report of the medical officer of health, Mr. T. J. Webster, that the milk-supply of the district requires to be supervised carefully for now that infants are so much bottle-fed it is more than ever essential that the milk should be pure, unadulterated, and plentiful.

Llandaff and Dinas Powis Health Report.

The rural district of Llandaff and Dinas Powis is contiguous to Cardiff and is probably affected by the good sanitary conditions which prevail in that town. The population of the district is 24,205 and Dr. Richard Prichard in his annual report for 1903 gives the birth-rate as 29 per 1000, the death-rate as 12 per 1000, and the infantile mortality-rate as equal to 98 per 1000 births. It is one of the few districts in which whooping-cough has been included in the schedule of notifiable diseases for any lengthened period and although Dr. Prichard does not express any very definite opinion as to the value of the practice he gives some very instructive statistics relating to the disease. During the past 14 years 1496 cases have been notified and 86 deaths have occurred. In the first seven years there were 746 cases and 50 deaths, giving a case-mortality of 6·7 per cent., and in the second seven years there were 750 cases with 36 deaths, or a case mortality of 4·8 per cent. There would appear, therefore, to have been some beneficial influences at work and they probably include the visits of the sanitary inspector with the printed instructions of the medical officer of health to the infected houses. The high rate of mortality from the disease among very young children is well shown in the figures for 1903. Of the 37 children under one year old who were attacked eight died, while of the 168 who were over one year only one died. The scheme of voluntary notification of cases of phthisis which was adopted in the district two years ago has been discontinued.

Carmarthen Asylum.

At the end of the first quarter of this year there were 680 patients in the three counties asylum at Carmarthen and the weekly charge for maintenance for pauper patients is now 9*s.* 0½*d.* The superintendent of the institution (Dr. E. Goodall) is pressing forward the question of superannuation for the officials and the asylum committee has passed a resolution approving the principle.

Talgarth Asylum.

At the Breconshire and Radnorshire joint asylum at Talgarth, which was opened last year, the weekly rate of maintenance for pauper patients is 12*s.* On March 25th last there were 245 patients in the institution.

Swansea General Hospital.

The corporation of Swansea has subscribed £100 to the funds of the Swansea General Hospital. The subscription from this source in former years has been 50 guineas.

Memorial to the late Mr. W. M. Barclay, F.R.C.S. Eng.

In the chapel of the Bristol General Hospital a brass tablet has recently been erected in memory of the late Mr. W. M. Barclay who was for many years connected with the institution. The inscription was the last composition of the late Canon Ainger, Master of the Temple, London, and is as follows:—

To the honoured memory of Wilfred Martin Barclay, F.R.C.S., born 1865, died 1903, connected with this hospital as student, assistant house surgeon, assistant surgeon, and surgeon from 1892 to 1903. This memorial is placed here by the medical, surgical, and nursing staff and students, past and present, of this hospital in affectionate appreciation of the skill and devotion with which he discharged the arduous duties of his several appointments and of the high character and personal charm which endeared him to his colleagues and to all with whom he was associated in the work of this institution.

Bristol Royal Infirmary.

The committee of the Bristol Royal Infirmary has expressed much regret at receiving the resignation by Sir Charles Cave, Bart., of the presidency of that institution. Sir Charles Cave has occupied the position for 25 years, a longer term than any of his predecessors, and has performed much useful work for the infirmary.

May 3rd.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Death of Dr. G. W. Beattie.

THE death occurred at Peel House, Failsworth, on April 25th of Dr. George Watson Beattie, medical officer of health of Failsworth, near Manchester, medical officer of the Prestwich union, and public vaccinator for Failsworth. He graduated M.B., C.M. at the University of Aberdeen in 1870 and proceeded to the M.D. degree in 1872. He was a member of the British Medical Association. Prior to settling in Failsworth Dr. Beattie was in practice in Ballater.

The University of Aberdeen: Commencement of the Summer Session.

The summer session at the University of Aberdeen commenced on April 26th. The attendance of students was apparently quite equal to that of former years, although the details of the numbers at the various classes have not yet been compiled. In connexion with the medical session, intimation is made of a course of instruction in anæsthetics to be conducted by Dr. A. Henderson at the Royal Hospital for Sick Children. In connexion with the lighter side of university life it is announced that the recreation park at King's College is now in first class condition for cricket and that practice at the nets may be had at any convenient time. The attention of newly matriculated students particularly is drawn to the cricket club, as it gives them an excellent opportunity of playing on the best cricket pitch north of the Tweed. The Wanderers' Club season started on April 30th with a match against the Aberdeen Royal Asylum team. It is also announced that the lawn tennis club courts are now ready for play.

Aberdeen Royal Infirmary.

It is announced that the property known as Sim's-square, situated opposite the Aberdeen Royal Infirmary, has been purchased by the directors for a sum between £6000 and £7000, with a view to probable extension of the institution at some future date. There is no doubt that the policy of looking ahead in the case of a public institution like this is highly important, for it seems inevitable, considering the way in which the infirmary has grown within recent years, that development and extension will have to be made in the future and it is well that the buildings should be as much together as possible.

May 2nd.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Irish Dispensaries.

THE report of the Local Government Board for Ireland recently presented to Parliament dealt not only with the position of the dispensary medical officers, as reported in THE LANCET of April 30th, but included a very important proposal for the reorganisation of the service. As a preamble it is stated that for the reasons already mentioned a reduction of the staff of medical officers is not only feasible but is called for in the circumstances, and, moreover, that such a diminution in the number of officers would enable a board of guardians without adding to the charge on the union funds to deal liberally as regards extra remuneration with those members of its medical staff to whom increased duties would be assigned. The report of the Local Government Board then states that "on the occurrence of vacancies in future in the dispensary medical staff they propose to consider in each instance whether the then vacant post could be abolished, and if so whether the other dispensary medical officers in the union could be placed in the charge of the extended areas and in the possession of increased salaries and their positions thereby substantially improved without inflicting any real hardship on the sick poor or imposing further burdens on the ratepayers."

National Association for the Prevention of Consumption and other Forms of Tuberculosis: Dublin Branch.

At a meeting of the committee of the Dublin branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis held at the Royal College of Physicians on April 22nd the methods of administering the oath in courts of law were considered. The committee looks upon the custom of kissing the Testament as dangerous to health and has addressed letters to the Recorder of Dublin and to the city divisional magistrates asking them to discountenance the practice in their respective courts and expressing the hope that the method of taking the oath with the uplifted hand will in future be followed more frequently.

Royal Victoria Hospital, Belfast.

The report of the working men's committee for the year ending Dec. 31st, 1903, has been published. The total amount of the working-class subscriptions for the year amounts to £3627 2*s.* 5*d.*, the largest sum ever received from the working men of Belfast and perhaps one of the largest working-class contributions in aid of any other similar institution in the United Kingdom. It is to be hoped that the employés in the shipyards will all subscribe a penny per week so that instead of £666 given by 20,000 of them more than £4300 may be contributed next year.

Seagulls and Herrings.

At a meeting of the Belfast Natural History and Philosophical Society held on April 26th Mr. John Brown, F.R.S., read a paper on the National Expenditure on the Maintenance of Gulls. He referred to the destruction of herrings by these birds and taking for his basis the hypothesis that each gull ate 200 fry in one day it would, in the two months of which its playtime lasted dispose of 12,000 fry. On the assumption that, if let alone, these baby herrings would all have matured and that the average price of herrings on the pier is about £1 per 1000 the keep of each gull for two months cost the nation £12. In the "play" of the gulls there would be about 100 birds engaged and supposing there were five "plays" per mile of coast, taking the coasts of the three kingdoms and adjacent islands, but omitting the smaller inlets, at 4000 miles they had a total of 2,000,000 birds whose keep for two months on herrings would cost 24 millions sterling. Some of the speakers in criticising the paper thought that the damage done by the gulls had been over-estimated. Probably if the herrings were left alone the sea would be overrun by them.

Public Health of Belfast.

In the report presented to the Belfast corporation on May 2nd it is stated that in the four weeks ended April 16th there were 70 deaths from zymotic disease and 111 and 204 respectively from phthisis and diseases of the respiratory organs, making a total of 315 from the two latter causes. The number of cases of infectious disease notified during the four weeks was 132, being an increase due to cases of erysipelas and "simple continued fever." Four cases of small-pox were notified, the last 16 days ago. There were 47 deaths from whooping-cough. It is owing to diseases of the respiratory organs that the death-rate (25 per 1000) is rather higher. It is hoped that the two bodies—the Poor-law guardians and the city corporation—will take joint action in reference to a consumption sanatorium.

May 3rd.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Cause and Prophylaxis of Miners' Anæmia.

ON April 19th M. Fabre read an interesting paper before the Academy of Medicine on Miners' Anæmia. From various researches which he carried out in the coal districts of France and Belgium he had come to the conclusion that miners' anæmia is only a symptom of disease and not a disease in itself (*entité morbide*). It has occurred in different mines at different periods and as epidemics of anæmia. Towards the end of the eighteenth century there was an epidemic of miners' anæmia in the district of Chemnitz in Hungary, in an argentiferous lead mine. Here the anæmia was due to lead poisoning. In the beginning of the nineteenth century an epidemic occurred in the anthracite mine of Fresne and Vieux-Condé. Here it was apparently due to "gassing" by sulphuretted hydrogen and to other causes. The epidemic ceased on the shutting up of certain galleries in which the men affected worked and on a change being made in the methods of working. A few years later an epidemic broke out at the mine of Vanneaux near Wasmes in Belgium due to "gassing" by sulphuretted hydrogen, carburetted hydrogen, and other deleterious gases. At Ville-bœuf near Saint-Etienne an epidemic occurred in 1859 due to asphyxia by bad air. The epidemic came to an end when improved methods of ventilation were employed. There is, then, no form of anæmia peculiar to miners, but they, like everyone else, are exposed to different and ordinary causes of anæmia. These causes M. Fabre has tried to classify under the following headings: anæmias due to general influences, those due to occupational influences, and those due to individual influences either congenital or acquired. Prophylaxis consists in the establishment of good ventilation, in strict attention to cleanliness, both of the workings and of the men who work in them, and the supply of good food. All excesses must be avoided and the hours of work must not be too long. M. Blanchard said that the question of the ankylostoma in France was one of great gravity. They all knew the ravages which it had caused in Belgium and in other countries and the danger for France was also serious. M. Blanchard considered that the Academy should institute a commission of inquiry into the subject. M. Roux considered that it would be very interesting to open a general inquiry throughout the mining districts so as to discover what is the frequency of ankylostomiasis in France. An inquiry dealing with the northern districts, under the presidency of M. Calmette, had already been opened and it would appear that ankylostomiasis is very widespread in the mining districts. M. Fabre, however, said that he had examined 300 miners for ankylostomiasis and had only found one case. M. Chauveau stated that in the district of Saint-Etienne miners' anæmia was very prevalent. Perroncito has just completed an inquiry into the question so far as it affects the Saint-Etienne basin and has found numerous cases of ankylostomiasis. M. Chantemesse said that in Liège the disease was very common, so much so that the socialist societies, such as, for instance, the Ligue Populaire, had started campaigns against ankylostomiasis. When any miner offers himself for work at a mine he is not allowed to go below until he has been certified as free from ankylostoma by the medical officers of the league. The Academy eventually decided to appoint a commission of inquiry.

Local Cocaine Anæsthesia in Abdominal Operations.

M. Chaput recently read a paper before the Academy of Medicine in which he laid great stress upon the advantages of the above-mentioned method of producing anæsthesia. It does not entail the chance of death during the operation, it does away with shock and with post-operative vomiting, and the patient can take food immediately after the operation. In patients who are not very fearful the surgeon can carry out most abdominal operations under local anæsthesia. The method is always indicated when general anæsthesia would be risky; it is the method of election for all superficial laparotomies and has very real though less obvious advantages for deep laparotomies. If the patient be very nervous chloroform may be given for the continuing of the operation and the previous administration of cocaine in no way interferes with the chloroform. Under cocaine M. Chaput has performed 25 major abdominal operations, such as those for appendicitis, hysterectomy, ovariotomy, and gastro-enterostomy. Most of the patients could not have taken chloroform.

Choline and Affections of the Nervous System.

At the meeting of the Neurological Society which was held on April 14th Dr. S. A. K. Wilson of Edinburgh communicated some results of a research upon choline which he has been carrying out in the wards under the care of M. Pierre Marie. Dr. Wilson stated that the presence of choline in the cerebro-spinal fluid was always an indication of a nerve degeneration more or less acute. For instance, he demonstrated its presence in a case of cerebral hæmorrhage, in ten out of 12 cases of tabes dorsalis, and in epilepsy, both in the form known as "tardive" and in Jacksonian epilepsy. Choline was not found in cases of hysteria or of secondary syphilis or where there was no definite sign of nerve degeneration. Dr. Wilson pointed out the usefulness of this clinical symptom, the technique for demonstrating which is by no means complicated. He had been unable to trace any definite relations between

the presence of choline and the result of a cytological examination of the cerebro-spinal fluid.

Lumbricosis in the Colonies.

M. Kermorgan has received various reports upon the above subject from his colleagues in the colonies. The disease is very frequent in hot countries, both among Europeans and natives, and its diffusion is due to the habit which the latter have of using all fæcal material when diluted with water for growing vegetables. Lumbricosis brings about ill-defined febrile conditions which are only too commonly ascribed to malaria and it is necessary to remind colonial practitioners of this fact. Various observations on the matter which M. Kermorgan laid before the Academy of Medicine at the meeting held on April 19th show that in opposition to the opinion of Davaine the lumbricus cannot be considered as simply a foreign body in the intestines. The worms can cause intestinal perforation and may move about so as to penetrate the biliary canals and the substance of the liver or other organs, in which case they are capable of setting up abscesses, not only in man but also in the anthropoid apes.

The Surgical Treatment of Meningitis following Fracture of the Base of the Skull.

At a meeting of the Society of Surgery held on April 27th M. Mignon read a paper on the case of a man, aged 23 years, whose head was caught between a pair of swing doors. Externally the only apparent injuries were two small wounds, one on either side of the head, but after a day or two the patient complained of headache and vomiting. His pulse became slow and he had subconjunctival hæmorrhages and right amaurosis. He lay curled up (*decubitus en chien de fusil*), gave the meningitic cry, showed Kernig's sign and also symptoms of toxæmia. M. Mignon diagnosed fracture of the anterior portion of the base of the skull and operated four days after the accident. The patient was trephined in two places. On the right side effused blood was found between the bone and the dura mater which latter was slate-coloured. M. Mignon put in a drain to a depth of six centimetres and repeated the operation on the left side where the hæmorrhage was less abundant than on the right. The results were good although Kernig's sign persisted for seven days. The patient recovered but with complete anosmia and atrophy of the right optic papilla. Lumbar puncture showed many lymphocytes in the cerebro-spinal fluid and cultures made from it showed pneumococci.

May 3rd.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Johns Hopkins Hospital's Losses by Fire Compensated.

DURING the recent great fire in Baltimore the Johns Hopkins Hospital met with serious losses which were likely greatly to impair its work. These facts coming to the knowledge of Mr. Rockefeller of New York he caused an investigation to be made by his attorney and on the report confirming the losses Mr. Rockefeller contributed the amount estimated to be necessary to enable the hospital management to continue its work uninterrupted. The amount thus contributed outright to be used at the discretion of the trustees was $500,000. The value of the property destroyed by fire was estimated to aggregate about $1,300,000 and the net loss to the institution was about $500 000. The management propose to rebuild the burned district and it is estimated that it will become more valuable than before and that the good work of the hospital will be considerably augmented.

Abolition of the Office of Coroner.

After a struggle of many years the medical profession of New York city has succeeded in securing the passage of a Bill through the State Legislature abolishing the office of coroner. The four coroners of the city have hitherto been a power in politics that defeated year after year the united efforts of all our medical organisations. The Bill which has finally passed wisely allows the present coroners to remain in office during the terms for which they were elected, but confines their duties to that of presiding at inquests as justices. The plan of the new law is to divide the duties of the coroner and to distribute them among existing departments of the city government. To the Health Department is assigned the duty of determining the cause of death; if there is an element of crime in the cause the district attorney is summoned and takes charge of the further prosecution of the case; if an inquest is held it must be in the magistrate's court. To make the service as accurate as possible the law creates a bureau in the Health Department called "The Bureau of Medical Examiners," at the head of which is to be a physician eminent in pathology; he is to be assisted by a corps of medical examiners selected for their special fitness as pathologists for their duties as investigators of the causes of death. It is estimated that the new law will save the city annually upwards of $60,000, besides giving a degree of reliance on that service which the former in the very nature of its organisation could never succeed in effecting.

The Prevention of Yellow Fever.

The activity of the public health authorities in cities where yellow fever prevailed last year in the State of Texas to prevent the recrudescence of the epidemic is worthy of notice. The city chiefly affected was Laredo and the health officials have taken early steps to prevent the propagation of the mosquito. An ordinance has recently come into operation in that city which makes a public nuisance all wells, cisterns, tanks, reservoirs, barrels, tubs, vats, pools, lakes, ponds, puddles, and other receptacles holding and containing water except when the water contained therein is coated and kept coated with oil. Any person on whose premises standing water is found not covered by oil shall be deemed guilty of maintaining a nuisance and is liable to a fine upon conviction in any sum from $5 to $25 for each day that the nuisance is maintained. A large corps of inspectors has been appointed who will daily visit all houses and premises and enforce this ordinance. It is also made an offence punishable by fine for any householder to have on his premises the larvæ of mosquitoes. If these stringent regulations are enforced it seems impossible to have a return of the fever if it is only disseminated by the mosquito.

Sanitation of the Panama Canal District.

Much interest has been manifested in medical circles in regard to a proper supervision of the sanitary interests of the district through which the Panama Canal is to be constructed. The experience of the contractors in the construction of the Panama Railroad is still fresh in the memory of many living physicians. The immense number of labourers who suffered from what was known as "Chagres fever" during the building of that road nearly crippled the work. The death-rate from malaria, of a very malignant type, was enormous and of those who survived to return to their northern homes large numbers remained permanently invalided. In his instructions to the Commission the President has called attention to the importance of enforcing very rigid compliance with sanitary regulations as follows: "There is one matter to which I wish to ask your special attention, the question of sanitation and hygiene. You will take measures to secure the best medical experts for this purpose whom you can obtain and you will, of course, make the contractors submit as implicitly as your own employés to all the rules and regulations of the medical department under you. I presume you will find it best to have one head for this medical department but that I shall leave to your own judgment." As a result of these instructions the Commission has appointed Major Gorgas of the Army Medical Department as the head of the medical staff. Major Gorgas was in charge of the sanitary service of Havana, Cuba, during the American occupation and was successful in exterminating yellow fever from that city. No appointment could possibly have been more appropriate.

United States Society for the Study of Tuberculosis.

The number of organisations for the study of tuberculosis is bewildering. No less than three propose to be represented at the International Exposition at St. Louis and each claims to be national in its character and to be the representative society. Prominent in these societies are the names of men who have never before been known to have any interest in the subject. In order to organise a society which should really be representative of the medical profession a call was issued for a meeting in Philadelphia on March 28th, to be composed of the leading physicians of the country known to be actual students of tuberculosis. The meeting was held accordingly and was truly representative in character not only of the best students of tuberculosis but of the medical profession of this country. In the preliminary organisation Professor William Osler of Johns Hopkins Hospital, Baltimore, was elected chairman. After a full and free discussion it was resolved to organise a "United States Society for the Study of Tuberculosis." A committee was then

appointed to prepare a constitution and by-laws for such a society and the meeting adjourned until the week of the meeting of the American Medical Association at Atlantic City, when the organisation is to be completed by the adoption of the constitution. The permanent organisation of this representative body of physicians will, it is to be hoped, supersede the ephemeral and ill-constituted bodies now so much in evidence.

April 24th.

Obituary.

AUSTIN MELDON, F.R.C.S., M.R.C.P. IREL.

THE uncertainty of life is strikingly exemplified by the unexpected death of Mr. Austin Meldon of Merrion-square, Dublin. Mr. Meldon, who had reached his sixtieth year and, as is well known in Dublin, was of exceptionally massive build, was apparently in his usual health until the evening of April 28th when he was seized with sudden illness and survived only a short time. His son, Dr. G. E. P. Meldon, most fortunately happened to be close at hand, so that his many friends have at least the consolation of knowing that everything which was possible in the melancholy circumstances was done. Mr. Meldon was a native of Miltown, county Dublin, and received his professional education at the Catholic University in Dublin, where among other prizes he gained gold medals in midwifery and diseases of women and in surgery and practice of medicine. In addition to these evidences of diligence and talent in the work of the medical classes he undertook, in 1864, before receiving his diplomas, the ambitious task of writing an "Essay on the Pathology and Diagnosis of Diseases of the Ovaries." This production gained for him the gold medal of the Pathological Society of Dublin. In 1865 he became qualified as L.R.C.P. and L.R.C.S. Irel. His subsequent career was one of much success, the well-merited reward of an excellent knowledge of his profession, careful attention to his patients, a sympathetic and prepossessing manner, and an unusual faculty of inspiring confidence. In 1874 he was admitted F.R.C.S. Irel. and in 1880 M.R.C.P. Irel. In 1888 the annual election of President and Vice-President and council of the Royal College of Surgeons in Ireland was held on June 4th, when Mr. Henry Fitzgibbon was elected President, and the contest between Mr. Meldon and Mr. William Frazer resulted in the former being returned as Vice-President by a large majority. In 1889 Mr. Meldon had the satisfaction of succeeding to the presidency. For many years he was on the staff of Jervis-street Hospital and was senior surgeon at the time of his death. Among other important offices which he at various periods held was that of president of the surgical section of the Royal Academy of Medicine of Ireland and consulting surgeon to the National Maternity Hospital; he was also three times president of the Irish Medical Association. Mr. Meldon made numerous contributions to medical literature, mostly in the professional periodicals. Many years ago he elaborated a theory of gout and published a paper on the subject in THE LANCET of July 27th, 1872, p. 114. His view was that the predisposing cause of gout was the presence in the blood of uric acid and of sodium compounds; in the condition of health nerve-force preserved these substances separately in a fluid state but when the nervous influence was impaired urate of sodium was formed. Mr. Meldon also published treatises on gout, rheumatism, lithotomy, and skin diseases. He was a deputy lieutenant and justice of the peace for county Dublin. The funeral took place on May 2nd at Glasnevin Cemetery.

WILLIAM FOTHERGILL TUCKETT, M.R.C.S. ENG., L.R.C.P. EDIN., L.S.A., J.P.

Mr. William Fothergill Tuckett died at his residence, 18, Daniel-street, Bath, on April 27th in his eighty-seventh year. The deceased, who was born at Bath, received his medical education at St. George's Hospital, London, taking the qualifications of M.R.C.S. Eng. and L.S.A. in 1841 and that of L.R.C.P. Edin. in 1860. Mr. Tuckett practised for several years at Abergavenny and then settled in Bath. He took a great interest in municipal work; he was first elected on the Bath town council in 1880 and had sat continuously since that year. In 1888 he was placed on the commission of the peace for the city of Bath and in 1892 he was raised to the aldermanic bench. Mr. Tuckett did much useful work on the council and was at one time chairman of the sanitary committee. A few weeks ago Mrs. Tuckett died and the deceased felt the loss very keenly. Mr. Tuckett was a staunch Churchman. He will be much missed in Bath where he was held in the highest esteem.

Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen passed the second examination of the Board in the subjects indicated at the quarterly meeting of the examiners:—

Anatomy and Physiology.—Richard Clayton Allen, Birmingham University; Raymond Ebenezer Apperly, Middlesex Hospital; James Appleyard, University College Hospital; Harold Edward Battle, Yorkshire College, Leeds; Thomas Herbert Cecil Bemans, London Hospital; Harold Garfield Bennett, St. Thomas's Hospital; Harry Blakeway and Frederic Henry Wormald Brewer, St. Bartholomew's Hospital; Frank Treadwell Boucher, University College, Bristol; Martin Binns Studer Button, London Hospital; Edward Bellis Clayton, B.A. Camb., Cambridge University; John Basil Close, Yorkshire College, Leeds; Robert Malcolm Coalbank, St. Bartholomew's Hospital; Francis Garland Collins, London Hospital; Archibald Cordon, Birmingham University; Cecil Frederic Curtis, Owens College, Manchester; Archibald Davidson and Maurice Mason Earle, Guy's Hospital; Herbert Edwin Tonge Dawes, B.A. Camb., Cambridge University; Richard Molesworth Dennys, St. Bartholomew's Hospital; John Henry Farbstein, University College Hospital; William Douglas Frew and George Edward Fritche, Middlesex Hospital; Robert Francis Gerrard and Gilbert Egerton Green, Liverpool University; Henry Granger, St. Thomas's Hospital; Samuel Hallam, Charing Cross Hospital; Hother McCormick Hanschell, Edward William Dacre Hardy, and Walter de Marchot Hill, St. Bartholomew's Hospital; William Woodmason Hellyer, London Hospital; Arthur Edmund Ironside, Charing Cross Hospital; John Gladstone Ivers, Owens College, Manchester; William Griffith Jones, L.D.S. Edin., University College, Cardiff, and Owens College, Manchester; William Robert Kilgour, St. Bartholomew's Hospital; William Herbert King, University College Hospital; Septimus Joseph Lee, Middlesex Hospital; Kenneth Arthur Lees, B.A. Camb., Cambridge University; William Hamer Leigh, Owens College, Manchester; Christian Frederick Louis Leipoldt, Guy's Hospital; Arthur Rieussett Littlejohn, St. Mary's Hospital; Philip Walter Mathew, Middlesex Hospital; Edward Pigott Minett, Guy's Hospital; Frederick Miller Neild and Henry John Nightingale, St. Thomas's Hospital; Francis William O'Connor, Richard Dominic O'Connor, and Tom O'Neill, St. Bartholomew's Hospital; Robert Colin Paris, King's College Hospital; Roderick Joseph Graham Parnell, University College, Bristol; Basil Thomas Parsons-Smith and Walter Patey, St. Thomas's Hospital; Edward Haldane Paterson, Guy's Hospital; Rowland Mabbatt Peake, Middlesex Hospital; David Phillips, St. Mary's Hospital; Lionel Lewis Phillips, St. Bartholomew's Hospital; Arthur John Scott Pinchin, St. Thomas's Hospital; Edwin Noyes Plummer, Guy's Hospital; Edgar Nelson Ramsbottom, B.A. R.U.I., Owens College, Manchester; Charles Edward Redman, B.A. Camb., Cambridge, University; Claude Mallinson Rigby, London Hospital; Arthur Tunna Rivers and Stuart MacKenzie Saunders, Guy's Hospital; Alfred Basil Rocke, University College Hospital; Alfred Ludovicus Sachs, M.A. Camb., Cambridge University and St. Thomas's Hospital; Gilbert Bodley Scott, St. Bartholomew's Hospital; Henry Joste Smith, Guy's Hospital; Herbert Austin Smith, B.A. Camb., Cambridge University and Westminster Hospital; Francis Radway Smyth, Middlesex Hospital; Francis Edgar Sprawson, Sidney Francis St. Jermain Steadman, and Alfred King Burford Richard Taylor, Charing Cross Hospital; Richard William Starkie, Owens College, Manchester; Arthur Arbuthnot Straton, St. Mary's Hospital; Edward Sutcliffe, Yorkshire College, Leeds; Douglas Compton Taylor, University College Hospital; Cecil Hallworth Trendgold, B.A. Camb., Cambridge University; Richard Grenville Vaughan, University College, Bristol; Harry Wales and John Phillip Walker, Yorkshire College, Leeds; Edward Barton Cartwright White, London Hospital; William Wyeyegoonewardena, Ceylon Medical College and King's College Hospital; and Edward Musgrave Woodman, St. Bartholomew's Hospital.

Anatomy only.—Darwin Mostyn Keith, University of Michigan, U.S.A.

Physiology only.—Henry Ward Lowry, St. Bartholomew's Hospital.

UNIVERSITY OF CAMBRIDGE.—At the Congregation on April 28th the honorary degree of Doctor of Science was conferred on Dr. W. F. Ostwald, professor of chemistry in the University of Leipsic. The following medical degrees were also conferred:—

Doctor of Medicine.—F. A. Bainbridge, Trinity; O. F. F. Grünbaum, Trinity; and A. Emerson, Caius.

Bachelor of Medicine and Bachelor of Surgery.—F. R. Carroll, Trinity; H. M. Joseph, Trinity; S. L. O. Young, Christ's; and E. A. Wright, Selwyn.

Bachelor of Medicine only.—H. C. Sidgwick, Clare, and R. D. Smedley, Pembroke.

CONJOINT EXAMINATIONS IN IRELAND BY THE ROYAL COLLEGE OF PHYSICIANS AND THE ROYAL COLLEGE OF SURGEONS.—The following candidates have passed the third professional examination as undernoted:—

Passed all Subjects.—A. Honours: P. V. Dolan. *B. Pass:* J. Bradley, M. J. Coyne, V. J. Cullen, Miss J. C. Hargraves, F. P. J. Leyrand, Leonard Lucas, J. J. McNelis, P. J. Rooney, W. Walsh.

Completed the Examination.—Israel Allaun, T. A. Bennett, W. W. Boyce, T. W. Browne, F. J. Cairnes, C. Cooper, F. A. Flynn, T. J. Galligan, J. M. Hayes, F. W. Matthews, R. A. Murphy, W. T. Morton, E. C. Mulligan, D. de C. O'Grady, A. L. O'Keeffe, M. O'Keeffe, W. J. O'Sullivan, H. E. Redmond.

INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND.—At the Final Examination for the Associateship (A.I.C.) held in April the following candidates were successful:—

James John Ellis, B.Sc. Lond., Arthur Gordon Francis, B.Sc. Lond., James Henry Pizey, Louis John Ezekiel Riley, Reginald Tyler, Reginald William Lane Clarke, Oliver Charles Minty Davis, B.Sc. Lond., Bernard Farmborough Howard, Harold Frederick Barke, Cyril Dickinson, B.Sc. Vict., Ernest Garratt, B.Sc. Vict., Charles Edgar Male, and John Robert Stubbs, M.Sc. Vict.

PORTISHEAD URBAN DISTRICT COUNCIL.—At the meeting of the Portishead (Somerset) urban district council held on April 29th Dr. Charles Arthur Wigan was unanimously re-elected chairman.

WATER-SUPPLY OF ILFRACOMBE.—The new waterworks of Ilfracombe have taken two years to construct at a cost of over £50,000 and it is expected that they will be completed by the end of May. The water will be brought from the heights of Exmoor, 13 miles distant.

DEATH OF A NOTABLE RUSSIAN ALIENIST.—The *Seiet* reports the death of Dr. I. V. Constantinovski, one of the oldest Russian alienists. He had been chief physician of the Preobrezhenski Infirmary. His best known scientific work was "Russian Law on Insanity: Its History and Relation to Foreign Laws."

MUNICH GYNÆCOLOGICAL SOCIETY.—Dr. H. MacNaughton-Jones, formerly university professor of obstetrics and gynæcology in the Queen's University at Queen's College, Cork, and ex-president of the British Gynæcological Society, has been elected a Corresponding Fellow of the Munich Gynæcological Society.

DONATIONS AND BEQUESTS.—Under the will of Mr. Jean Nicolas Eugene Pierson of Heaton Chapel, Lancashire, the Manchester and Bowdon Hospital for Consumption and Diseases of the Throat and Chest will receive £400.—By the will of Mr. Joseph Pover a legacy of £200 is bequeathed to Chester Infirmary, payable on the death of the testator's widow.

UNIVERSITY OF OXFORD.—The examinations for the degree of Bachelor of Medicine will commence in the Examination Schools on Thursday, June 16th. The time-table of the examinations has been published in the *University Gazette* of April 26th. The names of candidates, accompanied by the proper certificates and statutable fees, must be sent in to the secretary to the Boards of Faculties, Clarendon-building, not later than 10.30 A.M. on Wednesday, June 1st. Forms of entry, with certificate forms, can be had on application to the secretary. The examination for the degree of Master in Surgery will commence at 10 A.M. on Thursday, June 23rd. Names must be sent in not later than 10.30 A.M. on Saturday, June 4th.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—At a meeting of the President, Vice-President, and Council held on May 3rd the following examiners were elected:—Anatomy: Ambrose Birmingham and Alexander Fraser. Surgery: F. Conway Dwyer, Andrew Fullerton, Thomas E. Gordon, and R. Lane Joynt. Physiology and histology: E. L'E. Ledwich and Charles Coppinger. Biology: John J. Burgess. Ophthalmology: Arthur H. Benson and Patrick W. Maxwell. Pathology and bacteriology: Arthur Hamilton White. Pathology: Robert Allen. Midwifery and gynæcology: Frederick W. Kidd. Sanitary law and vital statistics: Caleb J. Powell. Engineering and architecture: J. Charles Wilmot. Dental surgery and pathology: Daniel L. Rogers and William G. Story. Mechanical dentistry: George M. P. Murray and William Booth Pearsall. Chemistry and physics: Edwin Lapper and Robert J. Montgomery. Languages: L. J. Woodroffe. Mathematics, physics, dictation, and English essay: J. W. Tristram.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Mr. John Tweedy, the President, and the Council of the Royal College of Surgeons of England entertained at dinner on April 28th a number of distinguished guests, notably the Portuguese Minister, the Earl of Onslow, the Bishop of St. Albans, the Bishop of Stepney, Sir Herbert Maxwell, Mr. Justice Grantham, Sir William S. Church, Sir Lambert H. Ormsby, Sir William H. Broadbent, Sir James Reid, Sir Thomas Smith, Sir Patrick Manson, Sir Harry Johnston, Sir John Kirk, Sir Halliday Macartney, Sir William H. White, Major-General Sir Frederick Maurice, Mr. C. F. Gill, Mr. Almeric Fitzroy, Mr. Briton Riviere, Mr. H. G. Wells, and Dr. Roswell Park of Buffalo. The following members of the Council were present in addition to the President—viz., Mr. Henry Morris and Sir Alfred Cooper, Vice-Presidents, Mr. Thomas Bryant, Mr. J. Langton, Mr. A. W. Mayo Robson, Mr. H. T. Butlin, Mr. Edmund Owen, Mr. R. J. Godlee, and Mr. W. Watson Cheyne, and the secretary, Mr. S. Forrest Cowell.

ROYAL NATIONAL PENSION FUND FOR NURSES.—The annual meeting of this society, of which Her Majesty the Queen is the president, has just been held. Mr. Thomas Bryant presided in the absence of the chairman and moved the adoption of the report for 1903. In the pension branch the number of policies issued during the year was 953, which is the largest total for any year since the fund was established in 1887. In the last quarter of the year annuities were being paid at the rate of over £10,000 per annum under 708 policies. The actuary's report showed that the profit bonus for the quinquennium ended Dec. 31st, 1902, amounted to £27,944, or two and a half times greater than in the previous quinquennial period and this surplus was divided amongst policy-holders. The amount distributed in sick pay was £1764. The expenses of management were 3·77 per cent of the premium income. The total funds at the end of the year amounted to £820,792, an increase during the year of £86,610. The actuary's investigations again give prominence to the fact, previously established at former valuations, that nurses as a body are longer lived than women in other walks of life. The actuary, it may be mentioned, is Mr. George King, F.I.A., F.F.A., vice-president of the Institute of Actuaries of Great Britain and Ireland and editor of the *Journal of the Institute of Actuaries*.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Government Shop Hours Bill.

THE Government measure to provide for the earlier closing of shops, which was printed on April 29th, has been already met by a hostile motion in the House of Commons from Sir CHARLES DILKE. This motion is in the following terms: "That in the opinion of this House the proposed measure for the early closing of shops is unduly hampered by restrictions and, not providing for the regulation of the hours of shop assistants, fails to satisfy the terms of the unanimous resolution of this House." In the Bill power is given to the local authority to make an order fixing the hour on the several days of the week at which shops are to be closed. This order must be confirmed by the central authority. Seven o'clock is mentioned as the earliest hour that may be fixed except on one specified day, when it is not to be earlier than one o'clock. The order may prohibit either absolutely or conditionally the carrying on of any retail trade after the closing hour in any place not being a shop within the area under the jurisdiction of the local authority. A number of trades and businesses are scheduled and it is provided that to none of these shall any order apply. The exemptions are: post-office business, the sale of medicines and medical and surgical appliances, the sale by retail of intoxicating liquors for consumption on or off the premises, the sale of refreshments for consumption on the premises, the sale of tobacco and other smokers' requisites, the sale of newspapers, and the business carried on at a railway bookstall or at a railway refreshment room. Persons contravening a closing order shall be liable to fines varying from £1 to £20.

A Shops Bill Withdrawn.

Lord AVEBURY'S Bill dealing with the Sunday closing of shops came on for second reading in the House of Lords on April 28th but it was withdrawn after a brief discussion. It was contended by Lord AVEBURY that the opening of shops on Sunday is rapidly increasing. Lord BELPER, however, speaking on behalf of the Government, questioned whether a *prima facie* case had been made out and he backed up this expression of opinion by statistics relating to 1902.

In that year there were 5293 prosecutions for Sunday trading and of these 4072 arose in one borough not of first-class importance, 403 in another borough, and 70 in a third. In one county there were 410 and in another 209. Nearly the whole of the prosecutions were confined within the areas of five local authorities. The inference he drew from these figures was that either over the greater part of the country shops were not open on Sunday or that local authorities did not think it expedient to institute prosecutions. Had Lord AVEBURY resolved to proceed it is very questionable whether he would have obtained a majority for the second reading and in any case there would have been no hope for the Bill in the House of Commons.

Sir Michael Foster and Ventilation.

A feature of a somewhat rambling debate on the domestic affairs of the House of Commons on April 28th was a speech by Sir MICHAEL FOSTER in which he made use of the sentence: "Few things seem to me to want ventilation more than the science of ventilation itself." The debate had turned on the question of the ventilation of the chamber. Sir MICHAEL FOSTER gave it as his opinion that from a chemical point of view the air of the chamber differed very little from the fresh air outside. When they came to regard it from the bacteriological point of view they were dealing with a difficult subject because the knowledge of bacteria was far smaller and less exact than the knowledge of the chemical constituents of air. In the recent investigation he had expected that a larger number of micro-organisms would have been found in the House. Here he interjected a word of warning. "Some of these bacteria are our friends and some are our foes and we do not always know which are our friends. If, therefore, a too zealous committee were to deprive the air of all its micro-organisms it is, at all events, possible—I think I might even say probable—that the House would suffer very considerably." And he concluded with an important suggestion. He thought there should be a large inquiry into the whole subject of ventilation, not making experiments upon the House, but using the remarkable circumstances existing there as an example by which to work and to advance the study. Unfortunately, the Commissioner of Works cannot take up the suggestion. He intimated, through his deputy later in the debate, that while he is prepared to allow further bacteriological experiments to continue he cannot find money to make the House the field for extensive scientific investigation.

HOUSE OF COMMONS.

THURSDAY, APRIL 28TH.

The Committee on Nursing.

Mr. SCHWANN asked the President of the Local Government Board what steps, if any, had been taken to deal with the report of the Departmental Committee on Nursing, which was made in November, 1902, and whether the recommendations of the committee in that report were to be adopted as they stand.—Mr. LONG replied: As stated in the reply given to the honourable Member by my honourable friend, the Secretary to the Local Government Board, on April 21st, after the report of the departmental committee on this subject was made I received a considerable number of representations on points relating to its recommendations. I have caused these representations to be brought before the committee which has duly considered them. I am now in possession of the views of the committee and I will shortly decide precisely what course shall be taken in the matter.

Flogging a Boy.

Sir WALTER FOSTER asked the President of the Local Government Board whether his attention had been called to a case of flogging at the Cottage Homes at Wednesfield in which the medical officer described the back of the boy as covered with weals and abrasions from the nape of the neck to the back of the knees; whether he could state the character of the birch rod used, and whether it was of the regulation pattern and weight; and whether steps would be taken to prevent such punishments being inflicted on young persons in Poor-law institutions in future.—Mr. LONG replied: My attention has been called to this case and I have communicated with the guardians of the Wolverhampton union with respect to it. The Cottage Homes committee of the guardians has investigated the matter and I understand that at the inquiry held by it the police medical officer, acting for the Society for the Prevention of Cruelty to Children, described the condition of the boy's back in the sense stated in the question. I am informed that the birch used was similar to that used by the police and that the weight of the instrument is four and a half ounces. The regulations made by the Local Government Board with respect to these homes, whilst allowing corporal punishment in the case of boys, provide that no punishment shall be inflicted with any instrument which has not been approved by the guardians or the committee, but it would seem that there is no record of the approval having been given to the birch used in the present instance. The guardians have censured the officer by whom the punishment was given and have adopted the report of the committee which recommends that the use of the birch as an instrument of punishment shall be abolished and which contains other suggestions with a view to preventing excessive chastisement in future. The action taken by them will, I hope, have the effect desired.

A Revaccination Difficulty.

Mr. JOHN O'DONNELL asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the condition of things existing in Belmullet union owing to an outbreak of small-pox in a neighbouring island, and to the bills for vaccination which had been incurred by the medical officers there and which the Poor-law guardians were unable to meet owing to the number of persons in that union who presented themselves for revaccination, and to the fact that no provision had been made for such a contingency when making out the rate estimate; and, if so, whether, in view of the poverty of the people in that part of the country, he would recommend the Government to make a grant sufficiently large to pay the amounts which were now due and for which no provision had been made by the local bodies.—Mr. WYNDHAM replied: I am informed that the expenses incurred by the revaccinations in the Belmullet union amount to £272. There are no funds at the disposal of the Government out of which a grant could be made to the guardians for the purpose of defraying this charge.

MONDAY, MAY 2ND.

Treatment of Inebriates.

Mr. LLOYD MORGAN asked the Home Secretary whether his attention had been called to the case of a prisoner who was committed by the magistrate at the North London police-court to two years' detention in an inebriate home; whether, without the consent of the magistrate, the prisoner was released from the home after being detained there for ten months and was again arrested for drunkenness; and whether he would consider the question of prohibiting the release of any such offender before the expiration of the term of detention without first obtaining the consent of the magistrate who committed the prisoner.—Mr. AKERS-DOUGLAS replied: Yes, sir, and the facts of the case are as stated in the question. It is much to be regretted that this person, whose prospects seemed good, should have relapsed, but the decision as to the time when an inebriate may properly be released on licence rests with the managers of the reformatory who have him under their immediate supervision and the case does not seem to afford sufficient ground for interfering with their discretion in this important matter or for making its exercise dependent on the concurrence of the committing magistrate who could not be in an equally good position for judging the chances that release under careful conditions might be in the inebriate's best interests.

Position of Army Nurses.

Dr. R. FARQUHARSON asked the Secretary of State for War whether he had been able to effect any improvement in the pay and position of the army nurses.—Mr. ARNOLD-FORSTER said: Yes, sir, a Royal Warrant will shortly be issued under which the salary of a nurse is fixed at £40 a year, rising to £45 a year—instead of £30 to £35 as at present—whilst the pay of the higher classes of sister, matron, and principal matron is correspondingly increased. Under the new regulations the matron-in-chief will receive £300 a year, rising to £350. The pensions depend on the rates of pay and are accordingly increased in proportion.

Irish Poor-law Medical Officers.

Dr. E. C. THOMPSON asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the report of the Special Commissioner of the British Medical Association who had recently inquired into the grievances of the Irish Poor-law medical officers; and whether considering the allegations contained in the report against the whole administration of the Poor-law medical service he would recommend the appointment of a Royal Commission to investigate the whole question.—Mr. WYNDHAM replied: The recommendations contained in the report referred to, even if they were practicable, could only be carried out at an increased cost to the ratepayers together with a further large subsidy from public funds. The views of the Local Government Board on the question of the Poor-law medical service have been fully set out in its recently published annual report and it is not considered that any new facts would be ascertained by an investigation of the character suggested.

Deaths from Burns.

Mr. ARTHUR HENDERSON asked the Home Secretary whether he would give a return of the number of deaths in the United Kingdom during 1903 certified by coroners as having resulted from burns caused by the igniting of clothing through open fire-grates under five years of age, over five years and under ten years, and over ten years of age respectively.—Mr. AKERS-DOUGLAS replied: I will consider whether a return such as the honourable Member desires can be given. It could be prepared only from information supplied by the coroners and I am now in communication with the Coroners' Society as to the details which it would be possible to procure and the best form for the purpose. Any return which I could grant would relate only to England and Wales.

State Registration of Nurses.

Dr. THOMPSON asked the President of the Local Government Board whether he would consent to appoint a small select committee to consider the advisability of the State registration of nurses.—Mr. LONG replied: The subject of nursing generally is not within the province of my department, which is only concerned with it as respects nursing in Poor-law institutions. I am not in a position to give the consent asked for in the question.

Unwholesome Teas.

Sir SEYMOUR KING asked the Chancellor of the Exchequer whether his attention had recently been called to the fact that the importation into the United States and Australia of low grade, impure, and unwholesome teas had been stopped by legislation; whether he was aware that quantities of teas which had been rejected by the Customs authorities in those countries had been, and were being, shipped to this country, and, together with quantities of similar low quality teas imported directly, were being employed here for mixing with superior teas without incurring the penalties for adulteration under existing laws; and, if so, whether he would consider if, without disadvantage to the Revenue, he could introduce similar regulations for the exclusion of such teas from this country.—Mr. AUSTEN CHAMBERLAIN said: Only one case has been brought to my knowledge of the importation into this country of tea rejected in the United States or Australia. The legislation in the United States to which the honourable Member refers requires that imported tea should come up to certain selected standard samples. The terms of the Australian law appear to correspond closely with the law in this country which provides for the seizure or destruction of any tea which is either exhausted or mixed with other substances or unfit for human food, and in pursuance of the Customs regulations over 66,000 pounds of tea were condemned in 1903. I do not think that any alteration in the existing system is required.

TUESDAY, MAY 3RD.

Small-pox in East London.

Sir THOMAS DEWAR asked the President of the Local Government Board whether in view of the recent outbreak of small-pox in East London he could state to what cause it was attributed and how many patients had been removed for treatment from the various districts of London by the Metropolitan Asylums Board.—Mr. LONG replied: I am unable to specify the precise causes to which the outbreak referred to is to be attributed but I may state that several cases occurred in some common lodging houses and seamen's boarding houses in Stepney and Poplar and the earliest of these cases seem to have been those of some cattlemen who came from America. The number of patients removed to the hospitals of the Metropolitan Asylums Board from the various districts of London from March 1st to April 29th was 242.

Fumigation of Vessels.

Sir THOMAS DEWAR asked the President of the Local Government Board whether he was aware that vessels entering French ports from plague-infected ports were not allowed to load until the owners had had such vessels fumigated for the purpose of securing the destruction of any rats which might be on board; and having regard to the remarks contained in the last annual report of the medical officer of health of the Port of London and the prevalence of plague in the Far East, whether the question of adopting regulations similar to those in force in France would be considered.—Mr. LONG said: I am aware of the decree made by the French Government with regard to this matter. That decree was, however, issued before the recent International Conference at Paris took place. The provisions on this subject included in the Convention made as the result of the Conference are less stringent than those of the decree. The Convention is now under the consideration of the Governments concerned. It has been the practice of my department to recommend the destruction of rats on board vessels coming from plague-infected ports when the vessels are empty but it has not been thought necessary to make this compulsory.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Medical Laboratory Methods and Tests. By Herbert French, M.A., M.D. Oxon., M.R.C.P. Lond., Medical Registrar, Guy's Hospital. Price 5*s.* 6*d.* net.

BALE, JOHN, SONS, AND DANIELSSON, Limited, 83-91, Great Titchfield-street, W.

Patent Foods and Patent Medicines. Two Lectures by Robert Hutchison, M.D., F.R.C.P., Assistant Physician to the London Hospital and to the Hospital for Sick Children, Great Ormond-street. Price 1*s.* net.

Diseases of the Appendix Vermiformis and their Treatment. By F. G. Lloyd, M.R.C.S. Eng., L.R.C.P. Lond., late Resident Medical Officer, West London Hospital. Being a Reprint and Enlargement from papers by the same author in THE LANCET and *West London Medical Journal*, 1904, and read before the West London Medico-Chirurgical Society. Price 2*s.* net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

A Manual of Dental Anatomy, Human and Comparative. By Charles S. Tomes, M.A., F.R.S., F.R.C.S. Sixth edition. Price 12*s.* 6*d.* net.

The Closure of Laparotomy Wounds as Practised in Germany and Austria. Including Detailed Methods and Views communicated by over Fifty Leading Surgeons. Edited and translated by Walter H. Swaffield, F.R.C.S. Ed., M.D. Ed., Fellow of the Obstetrical Society of London. Price not stated.

CLAY, C. J., AND SONS, Ave Maria-lane, E.C.

A Manual and Dictionary of the Flowering Plants and Ferns. By J. C. Willis, M.A., Director of the Royal Botanic Gardens, Ceylon. Second edition, revised and rearranged in one volume. (Cambridge Biological Series; General Editor—Arthur E. Shipley, M.A.) Price 10*s.* 6*d.*

COLLINGRIDGE, W. H. AND L., "CITY PRESS" OFFICE, Aldersgate-street, E.C.

The City of London Directory for 1904. Price 12*s.* 6*d.*

HODGE, WILLIAM, AND COMPANY, Edinburgh and Glasgow.

The Medical Inspection of School Children: a Text-book for Medical Officers of Schools, Medical Officers of Health, School Managers and Teachers. By W. Leslie Mackenzie, M.A., M.D., M.R.C.P.E., D.P.H., F.R.S.E., Medical Inspector to the Local Government Board for Scotland, assisted by Edwin Matthew, M.A., M.B., C.M., M.R.C.P.E., Assistant Physician, Leith Hospital; Clinical Tutor, Edinburgh Royal Infirmary. Price 10*s.* 6*d.* net.

LEHMANNS, J. F., Munich.

Bericht über 137 Gallensteinlaparotomien aus dem letzten Jahre (6.10.1902 bis 6.10.1903) unter gleichzeitiger Berücksichtigung der nicht operierten Fälle. Von Prof. Dr. Hans Kehr in Halberstadt. Price M.5.

Der Einfluss von Boden und Haus auf die Häufigkeit des Krebses, nach Detail-untersuchungen in Bayern. Von Dr.med. Karl Kolb in München. Price M.4.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

The Meaning of a Modern Hospital. By W. Bruce Clarke, M.A., M.B. Oxon., F.R.C.S., Surgeon to St. Bartholomew's Hospital. Price 1*s.* net.

MACMILLAN AND CO., LIMITED, London.

Notes on the Composition of Scientific Papers. By T. Clifford Allbutt, M.A., M.D., LL.D., D.Sc., F.R.C.P., F.R.S., F.L.S., F.S.A., Regius Professor of Physic in the University of Cambridge. Price 3*s.* net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta.

Census of India, 1901. Volume I., India. Part I., Report. Volume Ia., Part II., Tables. By H. H. Risley, I.C.S., C.I.E., Officer of the French Academy, Corresponding Member of Berlin Anthropological Society, and E. A. Gait, I.C.S., Fellow of the Royal Statistical Society, Anthropological Secretary to the Asiatic Society of Bengal. Price, Part I., Rs.5 or 7*s.* 6*d.*; Part II., Rs.4 or 6*s.*

RUDEVAL, F. R. DE, 4, Rue Antoine Dubois, Paris.

Guide Pratique et Formulaire pour les Maladies de la Bouche et des Dents. Suivi du Manuel Opératoire de l'Anesthésie par la Cocaine en Chirurgie Dentaire. Par G. Viau, Chirurgien-Dentiste de la Faculté de Médecine de Paris, Professeur à l'Ecole dentaire de Paris. Troisième édition. Price Fr.6.

UNIVERSITY PRESS, Manchester. SHERRATT AND HUGHES, 59, Long Acre, W.C.

Sketches of the Lives and Work of the Honorary Medical Staff of the Manchester Infirmary from its Foundation in 1752 to 1830, when it became the Royal Infirmary. By Edward Mansfield Brockbank, M.D., M.R.C.P. Price 15*s.* net.

WALTER SCOTT PUBLISHING COMPANY, LIMITED, London and Newcastle-on-Tyne.

Man and Woman: A Study of Human Secondary Sexual Characters. By Havelock Ellis. Fourth edition, revised and enlarged. Price not stated.

WILEY, JOHN, AND SONS, New York. CHAPMAN AND HALL, Limited London.

Elements of Water Bacteriology, with Special Reference to Sanitary Water Analysis. By Samuel Cate Prescott, Assistant Professor of Industrial Biology, and Charles Edward Amory Winslow, Instructor in Sanitary Bacteriology in the Massachusetts Institute of Technology. Price 5*s.* 6*d.* net.

A Laboratory Manual of Physiological and Pathological Chemistry. For Students in Medicine. By Dr. E. Salkowski, Professor in the University and Director of the Chemical Laboratory of the Pathological Institute, Berlin. Authorised translation from the second revised and enlarged German edition. By W. R. Orndorff, A.B., Ph.D., Professor of Organic and Physiological Chemistry in Cornell University. Price 10*s.* 6*d.* net.

A Method for the Identification of Pure Organic Compounds by a Systematic Analytical Procedure based on Physical Properties and Chemical Reactions. Vol. I. Containing Classified Descriptions of about 2300 of the more important Compounds of Carbon with Hydrogen and with Hydrogen and Oxygen. By Samuel Parsons Mulliken, Ph.D., Instructor in Organic Chemistry and Organic Analysis at the Massachusetts Institute of Technology, Boston, Mass. Price 21*s.* net.

Immune Sera. Hæmolysins, Cytotoxins, and Precipitins. By Prof. A. Wassermann, M.D., University of Berlin. Authorised translation by Charles Bolduan, M.D. Price 4*s.* 6*d.* net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BIRMINGHAM, W. P., M.D. Dub., has been appointed Honorary Consultant to the Fremantle Public Hospital, Western Australia.

BURGESS, MILDRED M., M.B. Lond., has been appointed House Surgeon to the Royal Free Hospital, Gray's Inn-road, London, W.C.

CLARKE, WILLIAM, M.B. Toronto, has been appointed Clinical Assistant to the Chelsea Hospital for Women.

COVENTRY, CHARLES, M.B., Ch.B. Vict., has been appointed Officer, Subiaco Local Board of Health, West Australia.

ELLIS, L. ERASMUS, M.D. Brux., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A., has been appointed Clinical Assistant to the Hospital for Consumption and Diseases of the Chest, Brompton, London, S.W.

FALKNER, EDGAR ASHLEY, M.B. Durh., F.R.C.S. Eng., L.R.C.P. Lond., has been appointed an Official Visitor for the Hospital for the Insane, Toowoomba, Queensland.

GOW, P., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Senior House Surgeon of the Stanley Hospital, Liverpool.

HAYMAN, CHARLES AUGUSTINE, M.D. St. And., F.R.C.S., L.R.C.P. Irel., L.D.S. R.C.S. Eng., has been appointed Honorary Assistant Dental Surgeon to the Bristol Royal Infirmary.

HINGSTON, CHARLES ARTHUR, M.B., B.Sc. Lond., M.R.C.S., has been re-appointed Honorary Physician to the Crownhill Convalescent Home, near Plymouth.

HUNT, ALBERT WILLIAM DUNNING, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Chagford District by the Okehampton (Devon) Board of Guardians.

MCCASH, JAMES, M.B., C.M. Glasg., has been appointed House Surgeon to the Royal Eye Hospital, Southwark.

MCEVOY, JOHN JOSEPH STUART, M.B. Syd., has been appointed Medical Officer at Beenleigh, Queensland.

MORRIS, BEDLINGTON HOWEL, M.B., B.S. Durh., has been appointed Medical Officer of the Adelaide Gaol, South Australia.

RANDELL, A. E., M.B., B.S. Melb., has been appointed Officer of Health, Victoria Park Local Board of Health, Western Australia.

ROBERTSON, MONICA L. M., M.B., B.S. Durh., has been appointed House Physician to the Royal Free Hospital, Gray's Inn-road, London, W.C.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer for six months. Salary at rate of £40 per annum, with board and lodging.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary at rate of £100 per annum, with apartments, board, and washing.

BEYROUT, SYRIA, LEBANON HOSPITAL FOR THE INSANE.—Medical Superintendent, preferably unmarried. Salary commencing £250, with board, lodging, attendance, washing, &c.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant for three months. Honorarium at rate of 52 guineas per annum.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Clinical Assistant for three months.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £50 per annum, with board and washing.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House Surgeon. Salary £80, with board, residence, and washing.

GLASGOW PARISH COUNCIL BARNHILL POORHOUSE, Springburn.—Resident Medical Officer. Salary £250 per annum, rising to £350, with board and lodging.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Physician.

INDIAN MEDICAL SERVICE, India Office.—13 Commissions in Indian Medical Service.

LEEDS, GENERAL INFIRMARY.—House Physician. Board, lodging, and washing provided.

LEICESTER INFIRMARY.—Clinical Assistant for seven months. Honorarium of £10 10s., with board, apartments, and washing.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer. Salary £80 per annum, with board, attendance, and washing.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead and Northwood, Middlesex.—Surgeon Laryngologist.

NORFOLK AND NORWICH HOSPITAL.—House Physician, unmarried, Salary £80 per annum, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, E.—House Physician. Also two House Surgeons, each for six months. Salary at rate of £60 per annum, with board, residence, and laundry allowance.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salaries at rate of £50 per annum, with board, residence, and washing. Also Second Honorary Anæsthetist.

OLDHAM INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, residence, and washing.

PERTH DISTRICT ASYLUM, Murthly.—Assistant Physician. Salary £110 per annum, with board, apartments, and washing.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

ROYAL FREE HOSPITAL, Gray's Inn-road, W.C.—Clinical and Assistant Pathologists and Junior Obstetric Assistant (female).

ROYAL LONDON OPHTHALMIC HOSPITAL, City-road, E.C.—Third House Surgeon. Salary £50, with board and residence.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Clinical Assistants.

SOCIETY OF APOTHECARIES OF LONDON.—Examiner in Medicine.

TOTTENHAM HOSPITAL.—House Surgeon for six months. Salary £90 per annum, with board, residence, and laundry.

VALKENBERG ASYLUM, near Cape Town.—Assistant Medical Officer, unmarried. Salary £250 per annum, rising to £300, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary at rate of £120 per annum, with rooms, gas, coal, and attendance.

YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

Births, Marriages, and Deaths.

BIRTH.

STYLE.—On April 21st, at South Brent, Devon, the wife of F. W. Style, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

CAMPBELL—WORSFOLD.—On April 26th, at Christ Church, New Malden, Surrey, Dr. Peter Campbell of Dundee, to Lucy, daughter of the late Mr. C. K. Worsfold, of Dover.

SCOTT—WILLEY.—On the 20th April, at Christ Church, Wallington, by the Rev. J. Hope Scott, M.A., of Liverpool, brother of the bridegroom, assisted by the Rev. John Scott, of Harbottle, father of the bridegroom, and the Rev. J. M. Blake, M.A., minister of the church, John Easton Scott, M.A., M.B., Ch.B. Edin., to Edith Willey, daughter of Mr. and Mrs. John Willey, of Kenley, Surrey.

DEATH.

MICKLE.—Deeply regretted, George Mickle, M.A., M.B., C.M., eldest son of the late Dr. David Mickle, of Kirklington, Yorkshire, on April 20th.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

ENTERPRISE.

To the Editors of THE LANCET.

SIRS,—I inclose a copy of a notice recently posted up at the gateway of one of the Central Marine Engine Works, West Hartlepool, and should be glad to hear whether in your opinion the action of the medical gentleman in question is in accordance with professional etiquette. He is engaged in practice in Hartlepool as a "specialist on diseases of the eye, ear, and throat" (the description is his own).

I am, Sirs, yours faithfully,

March 28th, 1904. H. I. L.

[INCLOSURE.]

IMPORTANT NOTICE TO WORKMEN AND APPRENTICES.

A meeting will be held in the Dining Hall on Friday, March 4th, at 5 P.M. prompt.

Business.

To move the following resolution:—That the offer of Dr. —— of West Hartlepool *to undertake the treatment of all eye cases* of workmen and apprentices employed in these works *at the rate of 7d. per head per annum be accepted*; and that Dr. —— *be appointed eye specialist on the terms stated above.*

The Doctor's Committee desire a *large* attendance at this important meeting.

The Central Marine Engine Works,
West Hartlepool, 3rd March, 1904.

*** We think that the medical man's enterprise in making such an offer is in doubtful taste. We do not see that he has pursued any courses of study or held any appointments entitling him to style himself a specialist in ophthalmology, otology, or laryngology.—ED. L.

A GARBAGE MONGER FINED.

ON April 28th a butcher named Heileman was fined £20 with £3 3s. costs for exposing diseased meat for sale. In addition to the evidence as to the condition of the meat the suggestion was made on behalf of the prosecution that the meat was destined for the manufacture of sausages, a means of disguise upon the danger of which it is not necessary to dwell. The defence was of a not unusual character in such cases. It was stated that the character of the meat was known (presumably no butcher could have failed to recognise it), but that "by accident" it had not been thrown away.

DESIGN OR ACCIDENT?

To the Editors of THE LANCET.

SIRS,—What makes a young child almost invariably put its first pieces of bread and butter or bread and jam into its mouth with the butter or jam side downwards? You may reply that it is because the child can taste the butter and jam better thus. If that be so, is it the best way perhaps, after all? Or is there any special advantage gained in lubricating the roof of the mouth by eating in the ordinary fashion? I do not think it can be that a certain twist of the hand explains the action of the child.

Perhaps other things can be learned by watching the first actions of children attentively.

I am, Sirs, yours faithfully,

London, April 29th, 1904. TARTINE.

THE PNEUMATIC SADDLE COVER.

WE have received from the Pneumatic Saddle Cover Co., Birkbeck-road, Kingsland, London, N.E., a specimen of their covers which are made to fit over the ordinary bicycle saddle. The cover is easily inflated to the required height by the mouth after it is fixed over the saddle and it is not necessary to use a pump. We have given the cover a trial and find that it forms a very comfortable addition to the ordinary saddle, affording a pleasant feeling of resilience and lessening the ordinary little shocks of the motion of the bicycle. We think that the cover would prove of service to the older generation of bicycle riders, as they would be able to obtain the exercise on which they lay store with less sensation of muscular fatigue. The price of the cover is 3s. 6d.

A NEW SPARKLET SYPHON.

THE sparklet system of aerating water is a great convenience not only to the householder but to the medical practitioner and the best apparatus for the purpose is the recently introduced improved syphon. This has a capacity of about four tumblers. A decided advantage of the method is that water of known purity may be employed, while various medicaments when desired may be added, such as lithium carbonate, piperazine, sodium carbonate, and so forth. The syphon costs only 2s. and the sparklet for charging it a fraction over a penny. It is perfectly simple in construction and the preparation of the aerated water is very easily carried out. The amount of gas contained in one bulb is sufficient to aerate the water and just serves to expel it from the syphon on opening the tap. We find only one drawback to the new syphon and that is that traces of iron, probably from the spout,

appear after a time in the aerated water, with the result that on mixing the water with wine or with spirits containing some tannin a slightly inky-looking mixture is formed. It would be a great advantage, though we are aware that it would add much to the cost, if the spout of the syphon were porcelain-lined. The makers are Aerators Limited, Angel-road, Edmonton.

"WHAT IS THE TRICK?"

"ANONYMOUS" writes with regard to the note under this heading in THE LANCET of April 30th, p. 1249: "If the baron succeeds in getting the names of any 'distinguished ladies' in an 'interesting' condition, blackmail might easily be the next step. It is possible he suspects a particular lady of being pregnant and adopts this method of obtaining more certain knowledge about her, with a view of blackmailing her in particular." We have received a similar solution from other correspondents.

HOLMAN TESTIMONIAL FUND.

THE following further list of contributions has been forwarded to us by the honorary treasurer of this fund, Dr. John H. Galton, Chunam, Sylvan-road, Norwood, S.E., by whom or by the secretary, Mr. W. A. Berridge, Oakfield, Redhill, Surrey, subscriptions will be received:—

	£	s.	d.		£	s.	d.
Mr. R. Clement Lucas	2	2	0	Dr. M. Cecil Hayward (O.E.)	1	1	0
Dr. T. Armstrong Bowes	0	10	6	Dr. S. Squire Sprigge ...	1	1	0
Dr. Guthrie Rankin ...	2	2	0	Dr. H. M. Stewart	1	1	0
Dr. G. H. Savage ...	2	2	0	Mr. Reginald Harrison ...	1	1	0
Dr. Arthur C. Latham	2	2	0	Mr. W. Wilson Coltart ...	1	1	0
Mr. Edred M. Corner (O.E.)	1	1	0	Mr. E. C. P. Hull	2	2	0

In the list published on April 30th, "Mr. W. D. Cropley" should read Mr. W. D. Crossley.

PEGAMOID WATERPROOF SHEETING.

ACCORDING to the results of a number of tests which we have made with this material it would appear to make an excellent substitute for rubber sheeting in medical and surgical practice. We have tried the effect of various reagents upon it and we find that the material withstands successfully the action of corrosive antiseptics such as carbolic acid, mercuric chloride, ammonia, and, further, the material may be immersed in boiling water without harm. Pegamoid waterproofing has a very clean appearance and it is practically free from objectionable smell. It evidently contains a waxy substance of high melting point, some of which we found is extracted by chloroform. Samples differing in thickness and quality were submitted to us by the New Pegamoid Co., Limited, of 144, Queen Victoria-street, London, E.C.

DR. J. T. C. CONRY'S DEFENCE FUND.

To the Editors of THE LANCET.

SIRS,—Since our last communication, which you inserted in THE LANCET of April 23rd, we have received as under:—

	£	s.	d.		£	s.	d.
Amount then acknowledged	23	12	0	Dr. G. Schorstein	2	2	0
Mr. R. F. Smallman ...	0	5	0	Dr. W. Henry White ...	1	1	0
Dr. Swanton	1	1	0	Total	£33	1	0

We are, Sirs, yours faithfully,

EDWIN T. ESSOR.
162, Ladbroke-grove, W., May 3rd, 1904. WALTER L. ROBERTS.

THE S. Y. P. PATENT TEAPOT.

THERE have been many modifications suggested in the construction of a teapot all directed towards eliminating as far as possible an excess of tannin in the infusion. The method adopted in the S. Y. P. teapot is certainly one of the simplest. In its normal position the tea-infuser is at the top of the pot and just under the dome. It consists of a small metal cage. Into this the tea is put, the teapot having first been placed in such a position that the tea-infuser is situated perpendicularly and the spout is at the top. Hot water is then poured in. After a few minutes' extraction the teapot is put back to its normal position and thus the tea leaves are brought out of the liquid and no further extraction can take place. The design is a successful one and is calculated to obviate the physiologically bad effects due to the drinking of tea containing an excessive amount of tannic acid. The manufacturers are Messrs. J. S. Barwick and Co., 6, Strand-on-Green, Chiswick, London, W.

AN INCOME TAX QUESTION.

To the Editors of THE LANCET.

SIRS,—Please tell me:—I have rooms in town (Manchester) and live outside. If I go by tram car or train or take a cab to my place of work can I set the cost down to my working expenses for income-tax purposes? I am, Sirs, yours faithfully,

A SURGEON.

*** No.—ED. L.

THE LECTURE AGENCY DATE-BOOK.

WE have received from the Lecture Agency, Limited, whose address is The Outer Temple, Strand, London, W.C., a copy of their small date-book or diary which devotes a line to each day from July 1st, 1904, to June 30th, 1906, there being a few pages at the end for memoranda. In the front portion are given a calendar from July, 1906, to June, 1907 tables of holidays, postal rates, and the sizes of posters and handbills, and a rough comparison of the metric weights and measures. In this last table we were astonished to see that "1 like equals 1¾ pints." The date-book will doubtless be especially useful to lecturers, public speakers, secretaries of societies, and entertainers who are compelled to make engagements a long time in advance. The cost of the date-book, including an insurance policy of £100 in case of death by railway accident available during 12 months, is 1s., or post free 1s. 1d.

Colonial Doctor.—There are several systems which appear to have proved successful in some cases and not in others. If our correspondent details the case more exactly, describing the onset and severity of the affection, we could publish the letter and possibly some of our readers could help him. He might refer to the article on Stammering in the "Encyclopædia Medica."

Sweated writes: Can anyone give me some particulars as to how a provident dispensary in a town of from 5000 to 10,000 inhabitants should be *properly* worked? I want to know about the wage-limit, the system of quarterly payments, and the collection of the money. Should members of such a provident dispensary be allowed to join sick clubs as well?

J. W. (Hull).—We do not think that there will be any objection to an announcement of the lectures being inserted in the local papers in the terms mentioned in our correspondent's letter.

Hopetoun must consult his medical man when he probably will find that the malformation is trivial and the remedy very simple.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (9th).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (10th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (11th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (12th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (13th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (14th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (9th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8 P.M. General Meeting. Election of Officers and Council for Session 1904-05. 8.30 P.M. Ordinary Meeting. Dr. F. J. Poynton: A Study of a Case of Rheumatic Fever (with lantern demonstration).—Mr. W. H. Clayton-Greene: The Influence of Early Operation on the Mortality and Results of Appendicitis.

TUESDAY (10th).—ROYAL MEDICAL AND CHIRURGICAL SOCIETY (20, Hanover-square, W.).—8.30 P.M. Paper:—Dr. C. Watson: The Effects of a Proteid Dietary (Raw Meat)—an Experimental and Clinical Study.—Dr. H. French: Leucocyte Counts in 83 Cases of Appendicitis; the Limitations of Leucocytosis as an Indication for Laparatomy.

WEDNESDAY (11th).—SOUTH-WEST LONDON MEDICAL SOCIETY (Bolingbroke Hospital, Wandsworth Common).—8.45 P.M. Paper:—Dr. E. F. Potter: Observations on the Removal of Adenoids.

DERMATOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—5.15 P.M. Demonstration of Cases of Interest.

THURSDAY (12th).—HARVEIAN SOCIETY OF LONDON (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Papers:—Dr. J. Taylor: Combined Sclerosis in the Spinal Cord associated with Blood States.—Dr. E. Squire: Common Errors in the Physical Examination of the Chest.

BRITISH GYNÆCOLOGICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Specimens will be shown by the President and others. Discussion on Dr. Macnaughton-Jones's paper on the Dangers of Pessaries.

FRIDAY (13th).—BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION (Medical Society's Rooms, 11, Chandos-street, Cavendish-square, W.).—Cases, Specimens, and Instruments will be shown by Dr. F. Spicer, Dr. Kelson, Dr. Lumsden, and others. Notes on a Case of Acute Abscess of the Thyroid Body after Influenza. Adjourned Discussion on Mr. M. Collier's paper on Latent or Intermittent Nasal Obstruction (opened by Dr. S. Wallace and Dr. H. Pegler). Communication:—Dr. W. J. Horne: Pachydermia Laryngis (with lantern demonstration).

EPIDEMIOLOGICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Meeting.

CLINICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Papers:—Dr. S. Green and Dr. W. H. B. Brook: Cases Illustrating the Value of the Roentgen Rays as a Factor in the Diagnosis of Early Pulmonary Tuberculosis.—Dr. E. A. Peters (introduced by Mr. C. J. Symonds): Notes of Two Cases Illustrating Some of the Advantages and Disadvantages of X Ray Treatment in Recurrent Breast Cancer.—Dr. H. E. Thompson and Dr. C. U. Aitchison (introduced by Dr. P. Kidd): Two Cases of Tumours of the Left Auricle Simulating Mitral Stenosis.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (9th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. F. Payne: Clinique. (Skin.) 5.15 P.M. Mr. W. G. Spencer: Diseases of the Lymphatic System.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. R. H. Cole: Sedatives in Mental Diseases.

TUESDAY (10th). MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. H. Green: Clinique. (Medical.) 5.15 P.M. Dr. G. H. Savage: The Relationship of Syphilis to Insanity.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. C. Williams: X Rays (illustrated by lantern slides).

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Buzzard: Tabes Dorsalis.

WEDNESDAY (11th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Cantlie: Clinique. (Surgical.) 5.15 P.M. Dr. L. Williams: Personal Hygiene.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Robinson: Disorders of Menstruation.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr. W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture II. Topography of the Brain Stem.

THURSDAY (12th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. H. L. Barnard: The Principles of Abdominal Diagnosis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Affections of the Bronchi.

CHARING CROSS HOSPITAL.—4 P.M. Mr. S. Boyd: Demonstration of Surgical Cases. (Post-Graduate Course.)

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. F. E. Batten: Cerebellar Disease in Children.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. J. E. Squire: The Physical Examination of the Chest (illustrated by cases). (Post-Graduate Course.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Dr. A. J. Whiting: Motor Paralysis.

FRIDAY (13th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. Clarke: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Lloyd: Administration of Anæsthetics.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Ferrier: Paraplegia.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

Will Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six Months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 5th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
April 29	29·97	S.W.	..	70	57	51	51	53	Overcast
,, 30	29·88	S.W.	0·07	78	61	52	53	54	Overcast
May 1	30·01	W.	..	113	63	49	49	52	Cloudy
,, 2	29·71	S.W.	0·18	73	54	48	47	50	Raining
,, 3	30·01	W.	0·21	107	59	42	45	51	Fine
,, 4	30·08	NNW	...	112	60	44	46	51	Cloudy
,, 5	30·04	S.W.	...	108	60	49	48	51	Fine

During the week marked copies of the following newspapers have been received:—*Midland Counties Tribune, Bolton Evening News, Western Daily Press, Evening Leader* (Newcastle), *Reading Mercury, Herts Advertiser, Aberdeen Weekly Free Press, South Wales Echo, Westminster Gazette, Dublin Daily Independent, Dublin Express, Hertfordshire Mercury, Exeter Express, Dublin Evening Telegraph, Echo, Bradford Observer, Daily Express, Globe, Windsor and Eton Express, Westmeath Independent, &c.*

Communications, Letters, &c., have been received from—

A.—Dr. James W. Allan, Glasgow; Acme Ventilating Co., Liverpool; Ajax; Académie de Médecine, Paris; Dr. H. E. Armstrong, Newcastle-upon-Tyne; Ambidextral Culture Society, Lond., Secretary of.

B.—Mr. J. W. Benson, Lond.; Birmingham and Midland Hospital for Skin, &c., Diseases, Secretary of; Messrs. J. N. Bishop and Sons, Lond.; Messrs. Bell and Bradfute, Edinburgh; Dr. E. Bottentuit, Plombières; T. B. Browne, Ltd., Lond.; Mr. T. S. Brew, Ballylongford; Benger's Food, Ltd., Manchester; Mr. W. H. Brown, Leeds; *British and Colonial Druggist (The)*, Lond.

C.—Dr. R. J. Collie, Lond.; Dr. G. E. J. Crallan, Bournemouth; Dr. H. Campbell, Lond.; Mr. F. W. Collingwood, Lond.; Mr. A. J. Sisson Cooper, Birkenhead; Dr. W. F. Colclough, Sherborne; Clayton Fire Extinguishing and Ventilating Co., Secretary of; Mr. G. Charbonneaux, Reims; C. L. B.; Cortland Wagon Co., Lond.; Messrs. Cassell and Co., Lond.; Mr. E. G. Cook, Ashford; Dr. Edward Cureton, Shrewsbury; Dr. J. Michell Clarke, Clifton; Messrs. Carfax and Co., Lond.; Mr. R. Cobb, Margate.

D.—Messrs. Davies and Co., Lond.; Messrs. Doulton and Co., Lond.; Mr. F. Dess, Lond.; Dowsing Radiant Heat Co., Lond.; Dumfries and Galloway Royal Infirmary, Treasurer of.

E.—Messrs. Eaton Hall, and Co., Lond.; Mr. J. Jameson Evans, Birmingham.

F.—Mr. W. Piercy Fox, Lond.; Dr. P. C. Franze, Nauheim; Mr. F. W. Fuller, Weymouth; Mrs. Ferris, Wickford; F. R. M.

G.—Mr. C. A. Gill, Skimouth; Great Eastern Railway Company, Lond., Continental Manager of; General Apothecaries Co., Lond.; Mr. A. Girard, Paris; Dr. W. Gordon, Exeter; Messrs. Giles, Schacht, and Co., Clifton; Messrs. W. and A. Gilbey, Lond.; Mr. W. P. Grant, Stockport; Mr. H. M. W. Gray, Aberdeen; Messrs. W. Green and Sons, Edinburgh.

H.—Mr. Carl Hentschel, Lond.; Mr. Edward Horder, Lond.; Dr. R. Hutchison, Lond.; Mr. Edwin J. Hinvest, Lond.; Hastings, &c., Hospital, Secretary of; Major C. H. Hale, R.A.M.C., Rangoon; Mr. G. F. Heap, Brocklesby; Mr. F. Hartmann, Lond.

I.—Messrs. Iliffe and Sons, Coventry.

K.—Dr. Henry Kenwood, Lond.; Dr. W. E. de Korti, Bexhill-on-Sea; Messrs. D. J. Keymer and Co., Lond.; Messrs. R. A. Knight and Co., Lond.; Mr. F. Kinton, Lond.

L.—Mr. H. K. Lewis, Lond.; Dr. H. Cripps Lawrence, Cheltenham; Leeds General Infirmary, Manager of; Messrs. Lea Bros. and Co., Philadelphia; Leicester Infirmary, Secretary of; Lecture Agency, Ltd., Lond.; Mr. W. Lloyd, Lond.; Local Government Board, Lond., Medical Officer of; London Association of Correctors of the Press, Secretary of.

M.—Mr. D McIntyre, Winnipeg; *Medical Review*, Lond., Manager of; Messrs. J. H. Maggs and Co., Eastbourne; Dr. D. McGavin, Makotuku; Messrs. Manlove, Alliott, and Co., Nottingham; Mr. W. H. Morgan, Treberbert, Dr. J. C McWalter, Dublin; Mr. W. Martindale, Lond.; Dr. H. Macnaughton-Jones, Lond.; Messrs. J. Maythorn and Son, Biggleswade; Dr. T. H. Macfie, Marseilles; Manchester Medical Agency; Dr. Frank E. Marshall, Liverpool; Mrs. F. McNeill, Edinburgh; Mr. Alfred Moxon, Nuneaton; Mount Vernon Hospital for Consumption, Secretary of; Medico-Legal Society, Lond., Hon. Secretary of; Metropolitan Hospital Sunday Fund, Secretary of.

N.—Messrs. F. Newbery and Sons, Lond.; National Hospital for the Paralysed and Epileptic, Lond., Dean of; Dr. J. T. C. Nash, Southend-on-Sea; *New York Medical Journal*, Editor of; Mr. J. C. Nessles, Lond.; Mr. H. Needes, Lond.; Messrs. H. Noffke and Co., Berlin; National Mutual Life Association of Australia, Lond., Manager of.

O.—Mr. C. O'Brien, Lond.; Oldham Infirmary, Secretary of; Dr. George Oliver, Farnham.

P.—Mr. Y. J. Pentland, Edinburgh; Poplar Union, Clerk of; Mr. Edward J. Pritchard, Lond.; Mr. R. B. Pilcher, Lond.; Dr R. W. C. Pierce, Guildford; Mr. Pronger, Harrogate; Messrs. Peacock and Hadley, Lond.; Dr. Percy Pope, Lond.

R.—Mr. G. A. Roberts, Berne; Messrs. L. Rose and Co., Lond.; Mr. William Roper, Vancouver; Dr. C. H. Reissmann, Adelaide; Royal Mail Steam Packet Co., Lond., Secretary of; Messrs. H. and J. Reading, Lond.; Mrs. Rawlins, Lond.; Royal College of Surgeons in Ireland, Dublin, Registrar of; Registered Nurses' Society, Lond., Secretary of; Messrs. E. J. Reid and Co., Lond.; Mr. H. Richardson, Lond.; Lieutenant R. M. Ranking, R.A.M.C., Aldershot.

S.—Dr. H. C. Sarcar, Calcutta; Dr. J. H. Stowers, Lond.; Dr. T. B. Shoolbread, Clay Cross; Messrs. Smith, Elder, and Co., Lond.; Mr. Eland Shaw, Laxey; Dr. P. Blaikie Smith, San Remo; Mr. E. E. Stubbings, Cambridge; Mr. W. Stuart Low, Lond.; Dr. Clarence Edward Skinner, New Haven, Conn.; Dr. G. E. Shuttleworth, Richmond Hill; Dr. L. E. Stevenson, Temple Sowerby; Dr. E. le Juge de Segrais, Paris; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Mrs. Skinner, Winchelsea; Messrs. G. Street and Co., Lond.; Messrs. Sykes, Josephine and Co., Lond.; Specialist Advertising Agency, Lond.; Sanitary Institute, Lond., Secretary of; Mr. August Schultes, Budapest; Dr. W. Johnson Smyth, Bournemouth; Dr. R. W. Strange, Newcastle-upon-Tyne; Messrs. Schimmel and Co., Lond.; Messrs. Sharland and Co., Lond.; Scholastic, Clerical, &c., Association, Lond.

T.—Mrs. Taylor, Melksham; T. M.; Tottenham Hospital, Secretary of.

U.—University College, Lond., Secretary of.

V.—Mr. J. W. Vickers, Lond.; Vinolia Co., Lond.

W.—Dr. T. Jason Wood, Bradford; West London Hospital Post-Graduate College, Dean of; Dr. Arthur J. Wallace, Liverpool; West Suffolk General Hospital, Bury St. Edmunds, Secretary of; Messrs. J. Wright and Co., Bristol; Dr. V. Wanostrocht, Kingston Hill; Mr. Oliver Williams, Lond.; Messrs. H. Wilson and Son, Lond.; Westminster General Dispensary, Secretary of.

Y.—York County Hospital, Secretary of.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. T. Angus, Treherbert; Messrs. Appleby and Wood, Manchester; Aymard Patent Milk Sterilizer Co., Ipswich; Messrs. Allen and Hanburys, Lond.; Apollinaris Co., Lond.; Dr. J. A. Arkwright, St. Margarets-at-Cliffe; A. H. W.; Dr. J. G. Andrew, Glasgow; A. M.

B.—Dr. B. Bela, Budapest; Bishopstone House, Bedford, Medical Superintendent of; Messrs. R. Boyle and Son, Lond.; Messrs. J. Beal and Son, Brighton; Dr. W. Burns, Ayr; Bristol Royal Infirmary, Secretary of; Mr. R. Blatchley, Lond.; Birkenhead Borough Hospital, Secretary of; Mrs. K. Behnke, Lond.

C.—Mr. K. D. Cooper, Lond.; Messrs. Samson Clark and Co., Lond.; Messrs. Carnrick and Co., Lond.; Mr. R. Colville, Bournemouth; C. H. D.; C. F. G. M.; Chesterfield and North Derbyshire Hospital, Secretary of; Mrs. Corner, Littleover; Messrs. Carter, Lond.; Mr. C. Caney, Lond.

D.—Mr. H. W. Dix, Malpas; Dorchester Asylum, Clerk of; Mr. W. Horton Date, Culmstock; Mr. C. Davys, Llandovery; Mr. M. Dee, Dungarvan; Surgeon R. Dickinson, R.N., Portsmouth; Miss K. Darker, Bromsgrove.

E.—Mr. F. G. Ernst, Lond.; E. L. R.; E. J. H. S.

F.—Messrs. Fletcher, Fletcher, and Co., Lond.; Fellows Manufacturing Co., New York.

G.—Dr. E. Gault, Melbourne, Australia; G. E. G. M.; Messrs. F. Gould and Co., Lond.; Messrs. Guyot, Guenin, and Son, Lond.; G. J. H. W.; Dr. J. Grant, Eastleigh; G. M.; G. W.; Grove House Private Asylum, All Stretton.

H.—Mr. W. Halley, Lond.; Mr. W. S. Handley, Lond.; H. J. W.; Messrs. Hooper and Co., Lond.; H. K. W.; Heigham Hall, Norwich.

I.—Messrs. Irvine and Garbutt, Selly Oak.

J.—Dr. J. H. Jones, Llandovery; J. F. S.; Miss E. James, Lond.; Jenner Institute for Calf Lymph, Lond., Secretary of; J. F. K.; J. T. J.; J. D.; J. C.; J. C. W.

K.—Mr. W. Kirwan, Oranmore; Dr. S. Kent, Bexhill-on-Sea; Mr. J. Kennish, Lond.

L.—Locum, Ambleside; L. R.; Dr. Lockwood, Hythe; Landlord, West Dulwich.

M.—Mr. W. Masland, Tiverton; Maltine Manufacturing Co., Lond.; Mr. R. Mosse, Berlin; Major C. H. Meyer, I.M.S., Bombay; Messrs. Macmillan and Bowes, Cambridge; Messrs. Z. P. Maruya and Co., Yokohama; Dr. A. Marriott, Aldeburgh; Medical Graduates' College, Lond.; Mr. H. May, Reading.

N.—Mr. J. W. Norman, Ashburton; Miss Newport, Lond.

O.—Mr. T. H. Openshaw, Lond.; Mr. J. M. O'Sullivan, Aberkenfig; Dr. J. Owen, Liverpool.

P.—Dr. W. G. Pretsell, Annfield Plain; Miss Pitt, Mitcham; Miss A. Pearson, North Elmham; Mr. F. H. Preston, Plumstead; P. R. J.

Q.—Queen's Hospital, Birmingham.

R.—Mr. R. Roberts, Llanddeusant; Dr. T. E. Richards, Abercrave; Messrs. Rutley, Son, and Vine, Lond.; Reuter's Telegram Co., Lond.; R. M. T.; Mr. J. W. Roberts, Thirsk; R. F. T.

S.—Stockport Infirmary, Secretary of; St. Peter's Hospital, Lond., Secretary of; St. Andrew's Hospital, Northampton, Secretary of; Messrs. Spiers and Pond, Lond.; Sheffield Royal Hospital, Secretary of; Messrs. T. and H. Smith and Co., Edinburgh; Springfield House Asylum, Bedford, Medical Superintendent of; Dr. A. Sandner, Bendigo; St. Mary's Hospital, Manchester, Secretary of; Mr. L. W. Stevens, Robertson, Cape Colony; S. G. T.; Messrs. Savory and Moore, Lond.; Miss R. Stephens, Bolton; Sunshine, Chislehurst; Sussex County Hospital, Brighton, Secretary of.

T.—Mr. W. A. F. Twemlow, Flackwell Heath; Dr. R. B. Turnbull, Mangaweka, New Zealand; Mr. R. Tattersall, Randfontein; T. C.; Dr. G. Tomkinson, Rhyl.

U.—University College, Sheffield, Registrar of.

V.—Victoria Hospital for Sick Children, Hull, Secretary of.

W.—Mr. J. H. White, Workington; Wonford House, Exeter; Mr. F. Williams, Romford; W. B. O. F.; Mr. S. Wand, Leicester; West Kent General Hospital, Maidstone, Secretary of; Warneford Asylum, Oxford, Medical Superintendent of; Mr. F. J. Wylie, Oxford.

X.—X. Y. Z., Lond.

Y.—Dr. E. S. Yonge, Manchester.

EVERY FRIDAY. THE LANCET. PRICE SEVENPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 12 6	One Year	£1 14 8
Six months	0 16 3	Six Months	0 17 4
Three Months	0 8 2	Three Months	0 8 8

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications ...	Seven Lines and under	£0 5 0
Official and General Announcements	Ditto	0 5 0
Trade and Miscellaneous Advertisements	Ditto	0 4 6
	Every additional Line	0 0 6

Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.
Terms for Position Pages and Serial Insertions on application.

An original and novel feature of "THE LANCET General Advertiser" is a Special Index to Advertisements on pages 2 and 4, which not only affords a ready means of finding any notice but is in itself an *additional* advertisement.

THE LANCET can be obtained at all Messrs. W. H. Smith and Son's and other Railway Bookstalls throughout the United Kingdom. Advertisements are also received by them and all other Advertising Agents.

Agent for the Advertisement Department in France—J. ASTIER, 31 Rue Rapts, Asnières, Paris.